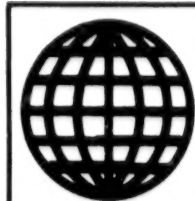


JPRS-TND-92-042  
13 November 1992



**FOREIGN  
BROADCAST  
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# ***JPRS Report***

# **Proliferation Issues**

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# PROLIFERATION ISSUES

JPRS-TND-92-042

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13 November 1992

[This report contains foreign media information on issues related to worldwide proliferation and transfer activities in nuclear, chemical, and biological weapons, including delivery systems and the transfer of weapons-relevant technologies.]

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## INDONESIA

### Passage of Japanese Plutonium Ship 'Very Risky'

*BK0311013292 Jakarta Radio Republik Indonesia  
Network in Indonesian 0000 GMT 3 Nov 92*

[Text] General Try Sutrisno, commander of the Armed Forces of the Republic of Indonesia [ABRI], has warned that it will be very risky for the Akatsuki Maru ship carrying plutonium from France to Japan to pass through the Malacca Straits. Speaking to newsmen after accompanying Gen. Rodrigues, chief of the Indian Army Staff, for a courtesy call on President Suharto at Jakarta's Merdeka Palace yesterday, Gen. Try Sutrisno said that Indonesia had to ensure the security of every civilian ship passing through the straits, including the Akatsuki Maru. As the ship is carrying high-risk material, preventive measures must accordingly be taken to avert possible damage to the environment. The armed forces commander declined to specify the preventive measures to be taken by the Indonesian Navy against the Akatsuki Maru ship, however, which has a dead weight of 3,300 tons.

### Foreign Minister Urges Safe Route

*BK0511154292 Jakarta Radio Republik Indonesia  
Network in Indonesian 1500 GMT 5 Nov 92*

[Text] Foreign Minister Ali Alatas says the Indonesian Government's stand on the passage of Japan's plutonium ship is clear. Therefore, the government calls on Japan to take a safe route for the passage of the ship because it is mindful of the very dangerous nature of the ship's cargo should an accident or any other mishap occur. Speaking in Jakarta today, Minister Alatas said the Indonesian Government is aware of the fact that it cannot unilaterally close the internationally-sanctioned straits and is therefore seeking a solution to the problem.

## JAPAN

### Reports on Plutonium Shipment From France

#### IMO Terms Secrecy 'Valid'

*OW0611111592 Tokyo KYODO in English 1058 GMT  
6 Nov 92*

[Text] Tokyo, Nov. 6 KYODO—Japanese secrecy surrounding the route it will use to ship plutonium home from France causes no direct security problems and is thus valid, the head of the International Maritime Organization (IMO) said here Friday.

In a meeting the press at the transport ministry, visiting IMO Secretary General William O'Neil said the key point is whether the plutonium can safely be shipped, adding that the ship's whereabouts have no direct link to security.

The Japanese freighter Akatsuki Maru, which left Japan on August 24, is now approaching the French port of Cherbourg to load a ton of plutonium that was reprocessed by France's state-run nuclear fuel company Cogema.

Citing security reasons, the Japanese and French Governments have been tight-lipped about what route the vessel will take.

The Akatsuki Maru is expected to return to Japan with the plutonium cargo by the end of the year.

Japan intends to ship about 30 tons of plutonium from Europe until 2010 after it has been reprocessed in Britain and France from spent nuclear fuel from Japanese plants.

The plan has sparked a number of countries and international environmentalist groups to raise concerns about the possibility of an accident at sea involving the extremely toxic substance.

Plutonium is also a key ingredient for making nuclear weapons.

The London-based IMO rejected last week's calls from the environmentalist group Greenpeace for an immediate postponement of the Japanese transportation scheme.

### Departure Set for 8 Nov

*OW0711132692 Tokyo KYODO in English 1253 GMT  
7 Nov 92*

[Text] Cherbourg, France, Nov. 7 KYODO—A Japanese ship that will carry plutonium from France to Japan began loading its cargo in France's northwestern port of Cherbourg after it arrived there Saturday morning.

The process of loading the Akatsuki Maru with 15 containers of the plutonium may take until late Saturday night, port authorities said, adding that the vessel may leave the port Sunday.

The Japanese ship is expected to load one ton of plutonium that was reprocessed by the French state-run nuclear fuel company Cogema at its plant in La Hague, about 25 kilometers from Cherbourg. The plutonium is to be used in Japan's fast-breeder nuclear reactor energy program.

Television monitors prepared by Cogema showed the loading of the cargo in a temporary press center set up inside a freight railroad station near the port in Cherbourg.

Loading of the containers is being done by hand, with workers attaching chains from a large crane to the four corners of each container and putting it down in the hatch. Each container takes about 20 minutes to load.



The 3,800-ton Akatsuki Maru, which left Japan on August 24 and sailed into the French port of Brest on October 29, arrived in Cherbourg at around 5 AM. [local time]

The whereabouts of the vessel had been undisclosed since it left Brest, about 260 kilometers west of Cherbourg, last Sunday after refueling and restocking its supplies.

Throughout the night Friday, some 2,000 military policemen and other security personnel were on alert against possible terrorist disturbances along roads connecting the plant and the port.

Some 100 people opposed to the Japanese plan staged a sit-in along the road to prevent the transportation of plutonium from the reprocessing plant to the port, but military policemen removed the protestors.

Environmentalists opposed to the plutonium shipment were also watching for the arrival of the Akatsuki Maru with two boats monitoring traffic inside and outside the port.

The French Navy seized one of the boats after it attempted to get close to the Akatsuki Maru before the loading began.

Japan intends to ship about 30 tons of plutonium from Europe through 2010, and future shipments of the plutonium will be from British and French facilities that will reprocess spent fuel from Japanese nuclear power plants.

A number of countries and environmental groups have raised concerns that the plan creates the possibility of an accident at sea involving the extremely toxic substance.

Plutonium is also a key ingredient for making nuclear weapons.

Citing security reasons, the Japanese and French Governments have been tight-lipped about what route the vessel will take on its voyage home.

Meanwhile, environmentalists in Tokyo said the Akatsuki Maru may pass through Cape Horn in South America or sail south of Australia after passing Cape Hope in South Africa on its way back to Japan.

About 30 countries, including Brazil, Chile, Malaysia, and Indonesia, have so far voiced concern over the possible sailing route that the Akatsuki Maru will use.

The vessel is expected to return to Japan with the plutonium by the end of this year.

## SOUTH KOREA

### No, Miyazawa To Discuss Detering DPRK Threat

SK0711024792 Seoul YONHAP in English 0221 GMT  
7 Nov 92

[Excerpt] Seoul, Nov. 7 (YONHAP)—South Korean president No Tae-u leaves Sunday for the Japanese city of Kyoto to have unofficial talks with Japanese Prime Minister Kiichi Miyazawa.

No is scheduled to fly to Osaka aboard the presidential jet, and then go to Kyoto for talks with Miyazawa. On his way back in the afternoon, he will meet representatives of Korean residents in Japan in Osaka.

No and Miyazawa are expected to exchange views on the international situation, particularly on the Korean peninsula and in northeast Asia, and on ways to promote cooperation between the two countries.

The two leaders will focus their discussion on joint measures to cope with the transition of power in Washington and ways to deter North Korea's nuclear development.

A No aide said Saturday that he expected the president to impress on the Japanese premier the necessity of continuous bilateral consultations prior to Japan's normalization of its relations with North Korea. No will explicitly state that inter-Korean mutual nuclear inspections should be conducted on the basis of the inter-Korean agreements. [passage omitted]

### Monthly Analyzes North's Nuclear Capability

SK3110065592 Seoul WOLGAN CHOSON in Korean  
Aug 92 pp 254-71

[Article by Yu Yong-won: "Top Secret Intelligence—The Three Riddles of North Korea's Nuclear Facilities"]

### [Text] Reprocessing Research at Unreported Facilities

When Director General Hans Blix of the International Atomic Energy Agency [IAEA] and his entourage visited Yongbyon, North Korea between 11 and 16 May 1992, the entire world was concerned with the operational test reactor (which has an electric output of 5MW) and the large-scale reprocessing facility there.

Reporters even concentrated their questions directed at Director General Blix on these two facilities at a press conference with foreign and domestic news services held on 16 May 1992, in China following his DPRK visit. However, according to one source familiar with the IAEA, the subject of these two facilities was not raised at the press conference that day, nor was it discussed afterwards at the IAEA directors' meeting which opened in June 1992. However, there was another facility which made Hans Blix's entourage nervous during their visit to North Korea.

The facility in question is an "Isotope Processing Laboratory" about which North Korea had not informed the IAEA. Since this facility was not among the 14 facilities listed in the report which North Korea had submitted to the IAEA, it seems as though North Korea was hesitant in making its existence public. Due to Hans Blix's demand, however, the inspection team was permitted to visit the facility for about 50 minutes in the late afternoon of 12 May 1992.

There were a total of seven "hot cells" at this facility, which North Korea explained as having been built for the purpose of developing isotopes for medical purposes. Because radioactive materials, such as spent fuel, emit high levels of radiation and are extremely hazardous to humans, facilities such as hot cells are required for reprocessing research. A hot cell is an isolated room of concrete that has windows of lead to restrict radioactivity and is used as a facility for chemical separation or experimentation using remote control robot arms (manipulators).

The size of this particular hot cell is said to be 2.4 meters [m] wide, 1.5 m deep, and 3 m tall in size, and the walls are 50 cm thick. This hot cell is much larger than the hot cell at the Korean Atomic Energy Research Center [KAERI] postradiation experiment facility. The North Korean side explained that they had started uranium and plutonium chemistry basic research at this facility in 1975 and confirmed that although they had several milligram units of plutonium through reprocessing research, they had not separated the plutonium.

On 13 May 1992, the day after he visited this facility, Director General Blix demanded to the North Korean side that this "Isotope Processing Laboratory" be included in the facilities listed under the safeguards accord (the agreement which stipulates full nuclear inspections). To which the North Korean side replied that the facility was used for medical purposes and that it was introduced from the former Soviet Union under conditions that it only be used for medical purposes.

As it is directly linked with suspicions of a nuclear core, the facility's existence is significant. Like the recycling of garbage, reprocessing is the extraction of reusable uranium and plutonium burnt and leftover from an atomic reactor's spent fuel. Because a nuclear weapon can be manufactured with high quality, pure plutonium (in excess of 99 percent) that can be extracted from reprocessing, countries which have nuclear development aspirations desire such technology.

In addition, the revelations resulting from the IAEA entourage's DPRK visits have made the South Korean atomic energy specialists nervous as they feel that North Korean nuclear development attempts have made more progress in diverse fields than was predicted.

#### **The Yongbyon Atomic Reactor Has Been Operational Since 1986**

The results of the IAEA's DPRK visit indicate that the North was ahead of its scheduled atomic reactor operation date and reprocessing facilities experimentation date. The Yongbyon experimental reactor, whose 5 megawatt [MW] output has attracted South Korea's interest, was presumed to have been operational since 1987, but in fact, it was revealed to have been operational since January 1986, more than a year earlier than expected. As a result, a need to recalculate the estimated amounts of spent fuel and plutonium emerged. This atomic reactor has attracted everyone's attention because it is the sole operational atomic reactor which can produce as much plutonium containing spent fuel as the North desires.

Many specialists differ in their opinion on the operational time of North Korea's reprocessing facilities, but they agree that as "hot test" procedures are essential to a facility becoming fully operational, a certain amount of time will be very necessary.

Before a reprocessing facility is put into operation, hot tests are used to confirm whether the connections operate properly when actual spent fuel is placed into pipes. North Korea admits to performing hot tests in some facilities at the height of construction for the reprocessing facility in 1990. Furthermore, by admitting in this unprecedented "declaration of conscience" to having produced gram units of plutonium through hot tests, North Korea acknowledges its possession of nuclear technology and admits to reprocessing. The fuel produced by this hot test was "the destroyed nuclear fuel rods" which came from the atomic reactor which is used for research at Yongbyon.

Hans Blix's entourage settled, to some extent, the level of concern experts have over the power output of the operational Yongbyon experimental atomic reactor. The South Korean side's initial estimate was that the thermal output of the reactor was 30MW, but the North Korean side's explanation was that the thermal output is 30MW and the electrical output is 5MW. The thermal output estimation was correct, but the experts point out that the electrical output just does not make sense.

There is both thermal output and electrical output in the power output of an atomic reactor power plant. Normally, the electrical output level is one-third of the thermal output. A power plant's turbines are moved by the steam produced from the heat. Because the heat is dissipated in different directions, the amount of electricity produced does not equal the total amount of heat, but rather the electrical output is lower than the thermal output.

If North Korea's explanation is true, the electrical output of the Yongbyon experimental atomic reactor is only one-sixth of its thermal output. The experts point out that if the North Koreans have not intentionally reduced

the plant's capacity, then this is a good example, which proves the inefficiency of North Korea's atomic facilities.

Hans Blix was not responsible for the feelings of surprise and frustration of the South Korean atomic experts. The KAERI experts who saw the video tape of the Hans Blix entourage's visit to the North made public by the IAEA in June 1992 noted that generally, there were many old-fashioned things like the analog system on the atomic reactor control system, which appeared in the tape often. This fact is being pointed out by the IAEA.

### Spent Fuel Which Is the Key

The actions of the Hans Blix entourage—which had taken on a “skirmish” nature, rather than that of a full-blown inspection—confirmed the intentions of North Korea's nuclear development through things like proving that the 180-m-long building in question is really a reprocessing facility. However, along with the open questions from the past, they also brought up some new subjects.

Three large questions remain after the two IAEA inspections (the first inspection was for two weeks beginning on 25 May 1992, the second inspection was also for two weeks beginning 7 July 1992). These three questions are: How much spent fuel has been produced from the 5MW atomic reactor? How much plutonium has been secured? And is there a reprocessing facility pilot plant hidden somewhere in North Korea? Of the three questions, the first and second are closely related.

Spent fuel, as the core essence of plutonium, holds the key to dissolving the suspicion of North Korea's nuclear development. If spent fuel has not been coming from the atomic reactor in question, and if North Korea has not been smuggling in plutonium, they cannot possess plutonium. If this is the case, the danger of their production of nuclear weapons has disappeared.

North Korea says that as the 5MW atomic reactor has not been fully operational, the nuclear fuel that was placed in the reactor in 1986 has yet to be replaced and that they plan on replacing the nuclear fuel pile in 1994 for the first time. North Korea was unable to get the atomic reactor operational because it made it independently without any foreign assistance, and many technical problems, such as an irreparable turbine system have occurred.

On the other hand, although they differ on the actual amount, many South Korean experts suspect that a fair amount of spent fuel has come from the atomic reactor. Yi Tong-pok, the South Korean representative to the North-South Prime Ministerial Talks, indicated, “It has been predicted that if the Yongbyon experimental reactor was in full operation for the past five years, North Korea would now possess about 130-180 tons of nuclear waste material.”

Representative Yi's announcement sparked public criticism and became the feature story in some daily newspapers, as though it were confirmed intelligence and not the estimate of experts that it was. Representative Yi reasserted the real intention of the announcement to reporters recently.

He said: “The recent talk was the estimation of experts, not confirmed intelligence. Experts calculated that 130-180 tons of spent fuel would be produced if 45-65 tons of nuclear fuel were placed in the 5MWe graphite-modulated, gas-cooled reactor as half of the nuclear fuel piles would require replacement every six months after the first two years. Furthermore, reprocessing this amount of fuel would produce about 13-17 kg of plutonium. If this ‘estimation’ is to be accurate, then the amount of spent fuel must first be determined, and even then it must undergo reprocessing. The press’ reports, however, overlook two steps of the reprocessing process to make North Korea's possession of that amount of plutonium sound like a confirmed fact.”

Although the amount of spent fuel is greatly influenced by the number of days the atomic reactor is operational, Representative Yi simply revealed that the calculations were made based on the assumption that the atomic reactor was operated on a “normal operation level.” He neglected to say whether this was based on a 365-days-a-year, day-in-day-out operational schedule, or an entirely average operational ratio (80 percent of the year or 290 days).

Because the basis of the estimated operational level is unclear in Representative Yi's announcement, it is difficult for the experts to make any comment. Yet they do point out that his estimate might be a bit high. One atomic energy expert postulates, “There are many occasions when an atomic reactor cannot be operational,” and wonders if “Representative Yi's announcement is not the highest estimation among the various ones given by experts.”

The IAEA is currently conducting a detailed analysis of the North Korean spent fuel issue. During the first inspection, which started on 25 May 1992, the IAEA received the operational logs of the 5MW atomic reactor from the North Koreans and are analyzing them. From their review of these logs, the IAEA will be able to determine the quantity of spent fuel manufactured from when North Korea exchanged the nuclear fuel piles.

### Suspicious Surrounding the Atomic Reactor's Operational Logs

However, relieving all the anxiety caused by these operational logs remains difficult. A highly placed South Korean Government official recounted an episode which occurred when the IAEA received the operational logs from North Korea.

The official said that the operational logs the IAEA inspection team originally received from the North Koreans were not in English, but in North Korean. Since



there were no Koreans on the IAEA inspection team, the inspection team requested that the North Koreans translate the logs, and the North Korean who had previous experience working with the IAEA inspection team was said to have translated it hurriedly into English.

Because it is a record written by a "partner in crime" and not by an objective third party, one may question the reliability of the translation.

Some people even point out that the record itself may be a fabrication. Yi Chang-kon, a KAERI researcher, said, "In business, ledgers can be fabricated by making a 'double set of books.' Operational logs, too, can be fabricated." He also warned that we should not blindly assume that the operational logs the North Koreans submitted to the IAEA are reliable.

It is not as though we lack the means to confirm the authenticity of the operational logs. Experts contend that they can tell whether the nuclear fuel rods were replaced if they enter the atomic reactor in question. However, the interior of this atomic reactor was not made entirely open to the public during the first IAEA inspection. Neither the Hans Blix entourage, nor the experts started inspections in North Korea on 25 May 1992 were able to enter the atomic reactor.

Therefore, only after the analytical results of the IAEA are published will the truth of the spent fuel problem be known. However, Western experts believe that the suspicions will not disappear until they enter the 5MW atomic reactor and confirm that there is no evidence that fuel rods have been replaced.

Plutonium, which has become one of the most frequently used terms in recent discussions, is the "nucleus" of the North Korean nuclear development question. The amount and quantity of plutonium extracted from spent fuel is difficult to uniformly say, as it is affected by such factors as the size of the atomic reactor, the operational method, and combustion time. Plutonium 239, which is extracted from spent fuel, is needed for reprocessing and is the raw material of nuclear weapons.

#### **The Theory of More Than Eight Kg of Plutonium Being Extracted**

The operational 5MW atomic reactor is an old fashioned reactor which, because it was not economical or reliable, ceased to be used after being developed in such places as Great Britain and France in the 1950's. It is known, however, to be suitable in the production of plutonium. This atomic reactor even in its suitability in plutonium production is a vital point which increases the South Korean experts' suspicions.

One cannot unconditionally operate an atomic reactor, extract spent fuel, and then have a plutonium reactor capable of making nuclear weapons come from that fuel. The degree of enrichment of weapons-grade plutonium must exceed 99 percent purity, and if this degree of enrichment is to be obtained, as one must devote careful

attention to the size of the fire when making charcoal from trees, one must be particularly careful when making an atomic reactor operational.

When burning nuclear fuel in an atomic reactor, one cannot make the fire too large or too small, and one cannot let the fire burn too long. If the fire burns too long, all that will remain of the charcoal will probably be ashes. Experts report that in order to obtain weapons-grade plutonium at the Yongbyon atomic reactor, the nuclear fuel piles must be exchanged once every six months at a minimum. Another vital point is the presumption that an adequate amount of spent fuel has already been produced if the atomic reactor in question has begun normal operation.

The nuclear fuel piles are normally exchanged once a year; in the original case of the domestic light-water reactor that burns too much nuclear fuel, because the plutonium burned too much, and because the degree of enrichment is too low, it is not suitable for weapons use even if the plutonium is refined.

There are many estimates about how much plutonium North Korea possesses. There are many people that believe that North Korea has secured at least eight kg of plutonium, the amount necessary to build one bomb that had the yield (20 KT [kilotons]) of the atomic bomb that fell on Nagasaki.

The estimation of a scholar from a South Korean university who was in charge of the reprocessing enterprise during the mid-1970s when nuclear development was pursued by President Pak Chong-hui is believed to be more persuasive than other experts' estimates from the aspect that he possessed an abundant amount of "real" experience.

Even while saying that "it is difficult to give an accurate estimation because data concerning the degree of combustion has not come out yet," he said, "I believe that if we take for granted that the atomic reactor in question has been 80 percent operational for six years, a minimum of eight kg of plutonium could have been extracted from the spent fuel which came out of the reactor."

He also emphatically stated, "One should not believe even a single word of what North Korea says about their position—that the nuclear fuel rods have not been exchanged even one time during the past five years, and that it will not be until 1994 that the nuclear fuel will be changed for the first time."

The problem is even more serious from the aspect that even if the North Koreans already possess more than 10 kg of plutonium, its size is only as big as an adult's fist, and realistically it will be impossible to find where it is hidden.

### "Clearly There Is a Pilot Plant"

The issue of reprocessing is also an indispensable measuring device of understanding the level of North Korean nuclear development. Because it has already been confirmed that North Korea possesses reprocessing technology, concern is now concentrated on the size and number of the reprocessing facilities.

Since its size is so enormous the Yongbyon "radiochemical laboratory (a large-scale reprocessing facility)," which has garnered the most concern has surprised many people. This 180-m-long facility, on which construction started in 1985 and is scheduled for completion in 1996, is known to have an official construction progression rate of 80 percent for the interior and 40 percent for the exterior sections.

After confirming that this is a reprocessing facility, opinions differ as to whether this is a commercial-use facility or whether it is used for the whole gamut of nuclear development. People who believe that the facility will be used as a commercial facility base their conclusion on the fact that the "radiochemical laboratory's" length of 180 m is similar to or even longer than the length of Western reprocessing facilities.

On the other hand, it is dangerous to stipulate the nature of the North Korean reprocessing facility based on its length alone. A reprocessing expert from the KAERI stated the following:

"More important than the facility's length and height are the equipment sizes inside the facility. This is because although the exterior of the facility was built on a large scale, the interior could be empty. Because the North does not have confidence in its safety, it is even possible that they built it larger than necessary based on Western standards. I provisionally judge the nature of this facility to be some half-point between a commercial factory and a pilot plant that is a first stage test facility."

Although opinions differ as to the nature of this reprocessing facility, there are virtually no dissenting opinions concerning speculation of the existence, somewhere, of a pilot plant smaller than this facility. Ordinarily, for a reprocessing facility to be realized, the steps run from laboratory to pilot plant to commercial factory, but because there is only the laboratory and (presumably) the commercial factory in North Korea, the pilot plant stage was probably omitted.

Skipping to the commercial factory from the laboratory stage and omitting the pilot plant is the same as a baby trying to run after just learning how to walk. It is the same as taking a modern weapon developed in a research center straight to the battlefield without even trying to test it. Of course it is possible when it is urgent, but it is not known just how powerful this modern weapon will be on the battlefield.

Because North Korea reportedly does not have the time or capital, it is a question of whether North Korea is

willing to break away from the norm and go on to directly build a large-scale reprocessing facility. Are they willing to endure the dangers of using a modern weapon without testing it? The existence of a pilot plant is more necessary to North Korea, who has no confidence in its safety in independent development. The person responsible for nuclear development during the President Pak Chong-hui regime said, "There is a tendency for each step to grow tenfold in size concerning reprocessing facilities." "There is more of a likelihood that there is a small pilot plant somewhere than a large-scale reprocessing facility." An atomic reactor nuclear scientist declared, "There is no doubt that somewhere in North Korea, there is a 18-m-long pilot plant that is about one-tenth the size of the large-scale reprocessing facility."

According to North Korea's contention, they started constructing a "radiochemical laboratory" in 1985, after solving the nuclear fuel rod problem while conducting reprocessing research in a "radiochemical research center's isotope processing reactor reprocessing facility." There was a difference of 10 years between the construction and start of laboratory research of this large-scale reprocessing facility. This is because the start of reprocessing research at this "isotope processing reactor reprocessing facility" commenced in 1975.

The fact that they conducted reprocessing research a long time before even a atomic reactor was operational, and that they constructed a large-scale reprocessing facility even before spent fuel was being extracted is a vital factor that confirms that North Korea's intention was to hurry its nuclear development by rushing reprocessing technology.

In addition, there are many people who point out that the differences in time and size between the reprocessing laboratory and the large-scale reprocessing facility suggest the existence of a pilot plant. The reprocessing pilot plant problem has become a continuing, undying source of suspicion of North Korean nuclear development.

### There Is No Refining Facility

Another question concerning the "radiochemical laboratory" is whether North Korea has taken and hidden the interior of the facility in another place. In March 1992, THE WASHINGTON POST, quoting a U.S. Government source, reported that a U.S. intelligence satellite captured images of North Koreans dismantling equipment from the interior of the Yongbyon reprocessing facility and loading it into large-sized trailers.

Afterwards, the indications of experts who said they did not know if part of the reprocessing facility's equipment had been taken and hidden, have been occasionally raised. Hans Blix, who had briefly looked inside this facility, indicated during a 16 May 1992 news conference in Beijing, "We did not see indications of anything having been removed from that facility." This is a task for the IAEA inspection team to investigate since it is something the experts could determine if they saw it.

A high-ranking official within the South Korean Government who saw the U.S. intelligence satellite pictures which were reported in THE WASHINGTON POST said, "Trailers were lined up in front of the reprocessing facility and cargo was being unloaded from them. It is not certain if it was the dismantling of an existing facility, or if it was new equipment being placed into the facility."

Enrichment, like reprocessing, is another "path" for making nuclear weapons. As the high-enrichment of uranium 235, the material for nuclear fission, is more than 95 percent pure, it is a method which makes a nuclear explosion possible. Compared with this, natural uranium's degree of enrichment is 0.7 percent and a pressurized light-water reactor power plant's uranium degree of enrichment is no more than 3 to 4 percent.

Even if North Korea has not attempted secret enrichment, as Iraq has, it is a problem which has drawn concern, but presently people are skeptical. The only facilities known to be related to enrichment up to now are the "refinement" facilities in Pyongsan and Pakchon. Refinement is a technology whose level is much lower than uranium enrichment technology in nuclear weapons production and is a process of removing uranium from a natural uranium mine which will be used for spent fuel. South Korea also has the technology for refinement.

This is also a topic about which there has been greatest amount of erroneous reporting in the South Korean press. Since there are different levels of refinement and enrichment, there have been many cases where a refinement facility has been believed to be an enrichment facility, and the false reporting has continued.

#### The Problem of the Development of Triggering Devices

North Korea could attempt enrichment in secret underground facilities, but the methods they can choose from are extremely limited. In uranium enrichment there are various methods such as the gaseous diffusion method, the centrifugal separation method, and the laser enrichment method. The gaseous diffusion method, which is basic technology, requires an enormous facility and a tremendous amount of electricity. The laser enrichment method will be difficult for North Korea to develop independently since it is a technology which is in its final developmental stages in even nuclear advanced nations.

The centrifugal separation method will be North Korea's only choice. Not only does this method, like the gaseous diffusion method, use vast amounts of electricity, but cooperation from foreign businesses and experts, like in Iraq, is inevitable because there are many parts that would be difficult for North Korea to develop independently. However, there has been no intelligence until now about North Korea's importing equipment related to enrichment.

A highly-ranked official in the South Korean Government disclosed: "It has been determined that between

enrichment and reprocessing, North Korea has chosen reprocessing", and "even the United States is not expressing any special doubt about enrichment." As there is only a single instance of a high-ranking interested North Korean party who has admitted "we are researching nuclear fuel cycle technology (the nuclear fuel rotation cycle which includes enrichment and reprocessing)," it seems that the South will have to see if the North is engaged in enrichment research.

If we say that producing plutonium by reprocessing spent fuel is the first step in nuclear development, we can say that the development of a triggering device and a special detonator is the second step which completes nuclear development. A triggering device ignites a nuclear bomb by accurately matching the timing of the nuclear explosion, which occurs in one-millionth of a second; and a special detonator assists the nuclear explosion when it ignites while protecting the nuclear materials.

Because a triggering device must operate in less than one-millionth of a second, an accurate control system is necessary. We know that in making this, a high-speed camera is needed that can take a picture in one-millionth of a second, and as it is virtually impossible for North Korea to independently develop such a high-speed camera, they will have to import it. However, there has been no information that North Korea has done so.

All that exists is one report in early 1992 by the Soviet press quoting a KGB document that reported that North Korea had already manufactured two nuclear triggering devices. The individual responsible for nuclear development during President Pak's regime said: "Even without a high-speed camera, a triggering device can be manufactured."

An internal detonation test is used to test a triggering device. This test matches the timing of a nuclear explosion cycle. U.S. intelligence satellites have photographed pits in the sand, which are evidence of internal detonation testing, encircling the Yongbyon atomic power facility and in the sand banks of the Kuryong River. Pits in the sand have been sighted 70 times between the mid-1980's and 1990.

Some believe that a triggering device may have been completed already, citing the fact that there has been no evidence of any testing since 1991, and that it normally takes 50 tests to complete internal detonation testing. However, there are many who say that these holes are probably not internal detonation testing pits. The individual responsible for nuclear development during President Pak's regime indicated: "Although internal detonation testing can be conducted in locations not open to the public, it is outside of expectations." Even Doctor Yi Chang-kon expressed his doubts by saying: "It is beneath common sense to say they are conducting internal detonation testing in front of an atomic power research center that must conduct comprehensive experiments."



As even a special detonator is difficult for North Korea to manufacture, there is said to be no concrete intelligence yet concerning any. Anyhow, as North Korea is pursuing investments with foreign corporations concerning large triggering devices and special detonators which need to be imported from nuclear advanced nations, there are not a few who say they can tell the degree of progress made by the North.

#### **"North Korean Nuclear Development Has Been Halted"**

The most basic question is: "Has North Korea, as expected, completed the manufacturing of a nuclear weapon?" Everyone is focused on this critical topic. Now that it has been confirmed that North Korea has attempted nuclear development, there are contradictory assessments as to whether the attempts have been successful.

Selig Harrison, who visited the North in April 1992 as the head researcher of the U.S. Carnegie Foundation, is one of the optimists who say that North Korean nuclear development has not advanced very far. At a policy discussion symposium entitled "North Korea's Nuclear Problem—How Should The United States And Korea Respond?" held on 3 July 1992 at the Seoul Hilton Hotel, Harrison stated: "It is a fact that North Korea has attempted nuclear development, but they have given it up and have postponed further attempts." The following is a summary of his assertions.

"As the results of the evaluation of the IAEA's inspection of North Korea will not be completed until October 1992, it is too early to draw conclusions about the degree of advancement of the North Korean nuclear development program. According to the IAEA, the Yongbyon reprocessing facility is extremely primitive and construction was halted when the facility was only 40 percent complete. Thus, it has absolutely no influence on plutonium production.

"At the North Korean Workers Party Central Committee in December 1991, it was decided to suspend nuclear weapons development. Therefore, it is true that North Korea has attempted nuclear development, but I believe they have either halted or postponed further attempts at development."

"At the North Korean Workers Party Central Committee in December 1992, it was decided to suspend nuclear weapons development" was the critical part of his speech that attracted the most concern among attendees. As soon as the attendees started focusing their questions on this, he said, "I received these 'hints' from two North Korean officials who were familiar with the topic," and avoided further reference to the subject.

Additionally, he provided a basis for optimism by noting: "A prominent U.S. scholar who met with three Russian nuclear scientists who had been consulted about North Korean nuclear development, told me that, 'North Korea's nuclear capability has not advanced not advanced much.'"

#### **Nuclear Development Has Been Completed**

On the otherhand, there are quite a few pessimists who say that North Korea has already completed nuclear development. In a telephone conversation with a reporter, Professor Yi Ki-taek of Yonsei University said, "I think North Korea has completed its nuclear development."

"There are several reasons why I come to that conclusion. First, since the end of the 1950s, North Korea has persistently endeavored to secure nuclear technology. Moreover, when he recently met with a certain notable, female U.S. reporter, Kim Il-song is said to have said 'North Korea is at a rudimentary and primitive stage, but we already possess four nuclear devices.'

"From a human intelligence (HUMINT) aspect, there is talk in Great Britain that Kim Chong-il is presiding over North Korea's nuclear policy. When various conditions and intelligence on North Korea is taken into consideration, it seems likely that North Korea agreed to IAEA inspections because they already possess nuclear technology and materials."

There are those who say that no longer is the question of whether North Korea has completed nuclear development important. Kim Tae-u, head researcher at the Korea Institute for Defense Analysis, claims that, "North Korea is already promoting a 'North Korean version of a Neither Confirm Nor Deny (NCND) policy.'" This is to say that in neither confirming nor denying the threat of nuclear arms, North Korea has begun pulling on the reins of the nuclear issue on the Korean peninsula.

"There are several reasons that North Korea has actually started its NCND policy. First, by showing the interior of the Yongbyon facilities, including the hot cell, on an official television broadcast in April 1992, North Korea alarmed Korean and Japanese experts. Furthermore, the North admitted their production of small quantities of plutonium to the Hans Blix entourage during their visit to North Korea.

"It is presumed that North Korea did not intentionally try to get U.S. intelligence satellites to take pictures of the evidence of internal detonation experiments on the banks of the Kuryong River. If these examples become public facts, the results will be unprofitable to North Korea. This is because it will only heighten suspicions of the North conducting nuclear development. If that is so, I feel that rather than being genuinely motivated by a need to make all of this public, North Korea is publicizing this, more importantly, to suggest that they are a viable nuclear threat with the completion of nuclear development."

It is difficult at this point in time to determine which theory is closest to "reality." Due to the characteristics of the nuclear problem, it is difficult to determine whether

North Korea really intended to secretly develop nuclear capability, and the question may remain unanswered forever.

Unfortunately, North Korea's intent in nuclear development, a basic assumption from the pessimist's point of view, is being confirmed as fact. All the various examples mentioned above supports this well. One elder nuclear power expert declared that "there is no doubt that North Korea has attempted nuclear weapons development."

"Contrary to international convention, North Korea signed the Nuclear Safeguards Agreement six years after joining the Nuclear Nonproliferation Treaty in 1985. They also chose to develop a graphite-moderated, gas-cooled atomic reactor which both Great Britain and France had abandoned earlier on because it was unreliable and uneconomical. Additionally, in the mid-1970s, North Korea sent atomic reactor construction and operations experts to the IAEA for training.

"In addition to the lack of a 180-m-long reprocessing facility, the lack of a pilot plant is strange. Why is it that output capacity of atomic reactors in North Korea has increased incrementally, while reprocessing facilities have not?

"Their mention of the high-speed breeder reactor and mixed nuclear fuel does not make any sense either. Even nations with advanced nuclear technology have not developed high-speed breeder reactors for commercial use because it is uneconomical, and as the world's supply of uranium is in a surplus, it looks as though economic feasibility is expected to drop even further. We can only explain North Korea's talk of the high-speed breeder reactor while in a toddler phase in atomic reactor technology, as being founded in its need to forcibly justify their extraction of plutonium.

"They claim they are conducting compound nuclear fuel research for placement in light-water reactors, but there are no light-water reactors under construction in North Korea. In considering these facts, it is clear that the starting point of North Korea's nuclear power is not for peaceful purposes, but rather for use in nuclear weapons development."

#### The Steps of the IAEA Inspections

While sympathizing with his points, many atomic power experts have been surprised that North Korea's nuclear development attempts, cover several fields, more so than expected. It is difficult to say positively that North Korea's level of atomic power technology is higher than the South's. However, they have officially acknowledged that they are conducting research in sensitive technology, such as enrichment and reprocessing, and it has been confirmed they possess reprocessing technology. Thus, it seems that we must believe they have conducted more diverse research than the South, which has been shackled when it comes to sensitive technology.

Other than those who pursue nuclear development on North Korea's behalf, no one yet knows to what extent North Korea's attempts have been fruitful. The results of the two IAEA inspections have stripped off one of the veils covering those facts. The problem is that virtually no one expects that the IAEA inspections will reveal the facts about North Korea's nuclear development.

Iraq is a good example of the limitations of IAEA inspections. Because Iraq faithfully received the inspections as a model nation of the nuclear inspections, the IAEA assessed Iraq as having no dangerous nuclear weapons development. However, it was confirmed after the Gulf war that Iraq's nuclear development was far more advanced than the experts had predicted.

It has been confirmed that nuclear development centers around enrichment. The inspection team said in many instances they found important secret facilities because of information provided by participants in Iraq's nuclear development or because of the inspection team's opportunism, rather than from information furnished by intelligence satellites. It is a critical issue that makes us aware of the many limitations of the inspections which are dependent on only hardware intelligence, such as satellites, without Humint, as in North Korea's case.

As a "special inspection," the IAEA's inspection of Iraq was different from a "general inspection", which covers only the facilities reported by the nation being inspected. There are some who note that the difficulties the IAEA experienced during the inspections in Iraq hint that there are limitations to even special inspections, the most effective tool at the IAEA's disposal.

The two IAEA inspections conducted in North Korea were general inspections. There are many more underground facilities in North Korea than in Iraq and because the IAEA has not inspected these underground facilities until now, it is appropriate that North Korea draws much more suspicion than Iraq. On the other hand, Iraq received much support from foreign businesses and experts. However, as North Korea has generally conducted development independently, there is a possibility that they are less advanced than Iraq.

The North-South mutual inspections present a realistic resolution which can overcome the limitations of the IAEA inspections. Because the South is uncomfortable about the North's nuclear development, and the North feels uncomfortable about whether the United States Forces in Korea (USFK) possess nuclear weapons, the mutual inspections will remove these mutually uncomfortable feelings because each can go to the suspicious locations and personally check.

However, there is almost no probability that this one and only resolution policy will succeed due to the differences in North and South opinions. South Korea's stance is that they cannot back down from their demand for special inspections which will allow them to include



North Korean military installations in subject inspections and will allow them to go unexpectedly to suspicious facilities. Special Advisor to the Foreign Minister Pan Ki-mun, who is in charge of the North Korean nuclear question, stressed: "There are rumors that South Korea will give in on the inclusion of a provision on military installations, but because inspections of military facilities and unannounced inspections are included in the North-South mutual inspections, just like a tiger's teeth are important to it, the South cannot ever yield on this point."

#### **Rumors of a Large Atomic Power Complex in Pyongsong**

Even though it is said that the North-South mutual inspections will be conducted according to the difficult conditions the South Korean side demands, there are predictions that the North Korean nuclear threat will not diminish. Various suspicions keep being raised. Is the North pursuing nuclear development in secret underground facilities which cannot be ascertained by South Korea and the United States? Does the North already possess several kilograms of plutonium and hidden it in hard-to-find locations?

Questions are being asked about any other nuclear-related facilities outside of the facilities North Korea has reported to the IAEA. A source well informed about North Korean nuclear development information related: "According to secret intelligence gathered by the United States in early 1992, there is a large atomic research center three times the size of the Yongbyon facility (between 5,000 and 6,000 researchers) in Pyongsong, North Pyongan Province." At the same time, U.S. intelligence reveals that there are atomic power research centers in Nanam and Wonsan as well.

If this intelligence is true, why did not the United States raise the question before now, and did they withhold this fact in order to use it as a trump card, if they knew about such a large facility? In response to this, the news source said: "Because there are no suspicious facilities like the reprocessing facility in Yongbyon in places like Pyongsong, the United States determined it not to be a problem."

An intelligence source in the Ministry of National Defense confirmed the existence of an atomic power research center in Pyongsong. "At the end of 1991, according to intelligence produced by the United States, there were indications of an atomic power research center at Pyongsong, but there was no detailed intelligence about things like its size," the source carefully stated.

The pessimists indicate that even with North-South mutual inspections, it will be difficult to stop the North's secret nuclear development and that Kim Il-sung is already pulling the reins of the Korean peninsula's nuclear problem. No matter how advanced the U.S. intelligence organizations are, they cannot thoroughly check the numerous North Korean underground facilities. After the IAEA completed its inspections, Kim Il-sung, who has perceived that not all of the North's

underground facilities can be checked, has "with confidence" received the North-South mutual inspections to dull the sharp edge of a "combined attack by the Republic of Korea, the United States, and Japan."

#### **The Problem With South Korea's Nuclear Policy**

Just as the North's authorization of the IAEA inspections blocked the use of a strong card such as the possible bombing of North Korean facilities, North Korea's acceptance of the North-South mutual inspections would make any further demands on the North difficult. Pessimists contend that even after the North-South mutual inspections they fear the threat of the North's nuclear development will not disappear. They also contend that after the North-South mutual inspections there will be no plan the South can present as its ace in the hole.

Concerning this, Special Advisor Pan Ki-mun emphasized: "The mutual inspections are a departure point, not the end of the journey for the resolution of the North Korean nuclear question." He also said: "The unannounced inspections cannot confirm all areas in North Korea, but as the North will not know when or where the inspection team will draw close, it provides a psychological restraint that will make them uneasy and will suppress their nuclear development."

It is time reporters pass judgment and not just talk about the various kinds of information or the experts' advice. Reporters who are not nuclear experts and who have never been to North Korea, much less to the Yongbyon nuclear facilities, sit in Seoul with limited information and print unreasonable stories about the true nature of North Korea's nuclear development.

Only after listening to the top South Korean nuclear experts for the past two months has this reporter gained an impression of an "outline" of North Korea's nuclear development. This reporter's "impressions" are that because North Korea's nuclear development has been very ambitiously pursued in various fields, there are suspicions about the fields they have pursued. However, is it not still too early to say North Korea has completed nuclear development?

The advice of the man responsible for nuclear development during President Pak's regime is quite timely. He confided: "The method for manufacturing an atomic bomb is taught in college courses, but in reality there are more difficulties than one would imagine."

Even more important than whether North Korea has made a nuclear bomb as was expected, and if not, can they make one, is that many experts point out that we must focus on the South's policies in response to the North's nuclear development. Every time suspicions are raised over North Korean nuclear development there is talk, confusing countries like the United States, as to whether the nuclear question is a South Korean problem or if it is a foreign problem. At any rate, because nuclear suspicions about North Korea are brought up continu-

ously, it is time to demand a South Korean independent nuclear policy which responds to the North Korean nuclear problem.

**North Unilaterally Postpones 10 Nov JNCC Talks**

*SK0611054192 Seoul YONHAP in English 0525 GMT  
6 Nov 92*

[Excerpt] Seoul, Nov. 6 (OANA-YONHAP)—North Korea unilaterally postponed a meeting of the inter-Korean Joint

Nuclear Control Commission (JNCC) Friday in protest against South Korea's military exercises.

Northern-side JNCC Chairman Choe U-chin sent a telephone message to Southern-side chairman Kong No-myong saying that Pyongyang had to cancel the 10th JNCC meeting slated for Nov. 10 because of Seoul's "anti-dialogue, anti-peace" attitude. Choe suggested that the meeting be rescheduled for Nov. 18. [passage omitted]

## INDIA

## Reports on Signing of Nonproliferation Treaty

## Commentary Previews U.S. Talks

*BK0611112792 Delhi All India Radio General Overseas Service in English 1010 GMT 6 Nov 92*

[Commentary by Kripasagar titled: "Indo-U.S. Talks on Nuclear Issue"]

[Text] Since the second round of Indo-U.S. talks on nuclear proliferation issue is scheduled to take place in Washington on 12th and 13th of this month, it is time to take stock of nuclear threats to India. It would also be realistic to take stock of the changes in nuclear perceptions since the last talks held in New Delhi in June.

The U.S., France, and Russia have agreed to a moratorium on nuclear weapons testing initially for a year. The U.S. Congress has even proposed that the U.S. should stop testing permanently from 1997, but this depends on other developments taking over the world, both foreseeable and unexpected. At least so far nuclear proliferation is not a hot issue, as it used to be among the Western nations. As far as the reports go, the U.S. has stopped making nuclear weapons, discontinued production of fissile materials, abandoned a plan to put up a plant to make [word indistinct] required for trigger for nuclear weapons. Besides it is withdrawing its tactical nuclear weapons, disbanding its strategic air command, and has taken its nuclear forces off (?alert).

But China, India's immediate neighbor, has not indicated its intention to join the arms reduction process and continues to conduct nuclear tests. It conducted a megaton underground nuclear test on 21 May 1992 when President Venkataraman was still on their soil. China conducted one more nuclear test in a horizontal shaft on 25 September 1992. These tests leave a political message to the world and India in particular. China has also not indicated whether it would suspend testing.

Though the Chinese talk of their no-use pledge, they have not explained why such a country needs tactical nuclear weapons after its principal adversaries have eliminated them. China, on the other hand, helped Pakistan by way of technology transfer for nuclear-weapon triggering mechanism in 1983-84. China and Pakistan have signed an ongoing nuclear technological relationship. Last year, on 25 July, Senator John Glenn while addressing the U.S. Senate had said, I quote, If China continues to pose a nuclear threat to India and to provide bomb technology to Pakistan, prospects for a regional regime will vanish, unquote.

Against this background, Indian side should tell the U.S. for a settlement of China's nuclear posture. [sentence as heard] The Japanese and Southeast Asian nations are also worried about Chinese growing nuclear arsenals.

The threat to India is still potent from another angle. China has been included in the five-nation conference proposed by Pakistan and USA. Pakistan has attempted to project China as a potential guarantor which cannot be accepted by India even if China solves its border issue with India. It was the Chinese nuclear threat that made Dr. Bhabha advocate India going nuclear; Lal Bahadur Shastri to seek nuclear umbrella from UK which was turned down, however; Shastri to change the Nehru policy of never to make nuclear weapons to keeping the option open; Shastri to sanction the subterranean nuclear explosion project of Pokhran; India's refusal to sign the nonproliferation treaty; and signing of Indo-Soviet Treaty of Peace and Friendship. Since then, the threat has rather increased with transfer of weapon-related technology to Pakistan and Pakistan developing nuclear weapons, and deployment of missiles in Tibet, and continued possession of tactical nuclear weapons.

India's improvement of relations with China is given as an argument for India to sign the NPT [Nuclear Non-proliferation Treaty]. Then the same argument rather forcefully applies to the West that continues to have nuclear capability for fear of reversal of Russian policy. Russian policies and their continued nuclear capability are regarded as justification for the U.S., Britain, and France to continue to maintain their nuclear deterrent. The issue of breakdown of the ex-Soviet arsenal, as raised Prime Minister Narasimha Rao in Security Council in January this year, is another factor which should be seen in the light of fast growth of Muslim fundamentalism in the region.

It is better for U.S. to consider the need to reverse the nonproliferation treaty when it comes up for extension in 1995 on the lines suggested by the Indian prime minister, Mr. Narasimha Rao, or an alternative NPT suggested by late Rajiv Gandhi in 1988 to remove its shortcomings and make it nondiscriminatory.

## Major Powers Send Tough Signals

*93WP0023A Madras THE HINDU in English  
12 Oct 92 p 8*

[Article by K. K. Katyal: "NPT: Growing Pressure on India"]

[Text] Because of the ill-informed talk and writings on the objectives of the Prime Minister, Mr. P. V. Narasimha Rao's recent visit to Paris, the real import of his discussions with his French hosts has been lost. As a result, the challenges that confront Indian diplomacy in the period ahead and the type of pressures New Delhi is certain to experience have not been properly comprehended. The problem is not confined to France—it is the same story with the U.S., Germany, Japan, the U.K., in varying degrees.

Speculative, unsourced reports appearing on the eve of Mr. Rao's departure gave an oversimplified, even misleading picture of the purpose of the trip. He, it was categorically stated, would explore the possibility of the

French supply of cryogenic rocket engine, now that the contract with Russia was in jeopardy, because of the U.S. pressure on Moscow. This was not the impression of those who had taken the precaution of checking with the normal sources of official information. There was little doubt that Mr. Rao was to gauge the mood in Paris on matters on which France used to take an independent stand, even as part of the Western alliance, during the cold war. France then did not always toe the U.S. line on the nuclear non-proliferation and the transfer of dual-purpose technology to the developing world. Its recent accession to the Nuclear Non-Proliferation Treaty (NPT) was a clear signal of the departure from the earlier position. The French President, Mr. Francois Mitterrand, and other leaders, however, continued to talk of an independent option. The purpose of the visit was to find out which was the authentic pointer—the professions of independence or the new stand on the NPT or for that matter, the Missile Technology Control Regime (MTCR). And this was to be done discreetly, because of the delicate nature of the matter. It was this format for discussions that was followed by the Indian side. It was not to be an inquiry about the supply of the cryogenic rocket engine, and it did turn out that way. What was undertaken was a vaster exploration, qualitatively different.

As of now, there is no occasion for India to scout around for alternative sources of rocket technology. The Russian contract, as already mentioned, is on and Moscow has not only resisted the U.S. pressure but shown signs of annoyance over it. Whether, in future, it finds it hard to stick to its commitment is yet to be seen. If it does, is France an ideal supplier, considering that the price earlier quoted by it was over three times the amount envisaged in the Russian contract, and that it was reluctant to transfer the relevant technology?

Also, New Delhi had no illusions about the French stand on an issue on which the U.S. had gone to the extent of seeking the cancellation of the Russian contract. Writing in these columns on the eve of Mr. Rao's departure, I had referred to this point thus: "Those who pin hopes on France to step in for the supply of cryogenic engine, in case Russia succumbs to the U.S. pressure and fails to comply with the contract with India, do not take into account the weaknesses and vulnerabilities of today's France."

With all the revived warmth in the bilateral field and serious bids to do business (as evident from the plans of four senior Ministers to come here in the next three months), there was no mistaking the hardened French stand on the NPT (and the MTCR)—it is the same as that of the U.S. or G-7 of the industrialised countries. The French leaders left the Indian side in little doubt about where they stand. What was stated in the closed-door discussions was repeated by the French Foreign Minister, Mr. Ronald Dumas, in reply to a question by me later on the parameters, within which France will supply the technology to India. "We understand," he said, "the desire of the Indian authorities to have access

to these technologies for pacific ends in order to ensure the development of their economy and it is equally important to us to see a great country like India associating itself with the consensus in the field of nonproliferation.

"As a logical consequence of its decision to sign the NPT, France, from now on, will apply the rule of fullscope safeguards, whereby a supplier country will only authorise nuclear exports to those countries having made the totality of their nuclear activities subject to the guarantees of the International Agency for Atomic Energy. It is within such a framework that Franco-Indian cooperation in the nuclear domain can be pursued."

The impact of this policy will be immediately felt in relation to the Tarapur Atomic Power Station. In this case, France stepped in for the supply of enriched uranium after the U.S. terminated the contract, but this arrangement is due to expire after a year. There should be no ambiguity about the French stand—preliminary indications of which had already been given in the official-level talks since November last year, which were continued in Paris at the time of Mr. Rao's visit. India may have other options—like the indigenous mixed oxide fuel, but that is a different story.

On the transfer of dual-use technology, the position of France is only slightly different from that of the U.S. According to Washington, the intentions of the recipients are not relevant, the assumption being that the option for the non-peaceful uses would be utilised. France, on the other hand, is prepared to discuss guarantees against the uses, other than those specified at the time of the technology transfer. In effect, there is no difference between the two.

It is not a happy scenario for India especially when the hardening of French postures coincides with tough signals from Germany, Japan, the U.K., and the continued U.S. pressure through the bilateral dialogue. Germany, of late, has been sharper in its suggestion that India sign the NPT and agree to the five-nation talks, suggested by the U.S. and Pakistan, for a nuclear-free South Asia. As a nuclear-free State, Germany, so goes the argument in Bonn, is for total nuclear disarmament and would like the goal to be achieved through the route prescribed by the NPT. India's refusal to accede to the treaty, it says, will give an excuse to Pakistan to do likewise, leading to escalation in the region. As its spokesmen explained recently, Bonn is not impressed by India's plea for review of the treaty—this is described as an over-pitched demand, intended to gain time. The message from Bonn is shriller than that from Paris, Tokyo or London.

During his visit to Tokyo in June, Mr. Rao was left in no doubt by his counterpart, Mr. Kiichi Miyazawa, about Japan's preference for India signing the NPT. Obviously, Japan was travelled far from the days when it used to object to the 'discriminatory' treaty. Both in Tokyo and Bonn, India has been told to follow the example of China, France and South Africa which have now fallen



in line with the NPT regime. To India's dismay, there is better appreciation of Pakistan's stand on non-proliferation. This is ironic—now that Pakistan has confessed, after repeated denials, that it possesses the capability to put together nuclear devices.

As for the U.S., the dialogue that began in March is to be resumed in November. So far, the two sides have confined themselves to a restatement of their known positions. Both Republicans and Democrats give an equally high priority to this issue and, as such, the pressure on India would continue, irrespective of the outcome of the U.S. Presidential election. Once the suspense of the contest is over, Washington is certain to address this problem with greater earnestness. When the dialogue began, the U.S. had in mind a notional time-frame of 18 months. The tempo of exchanges is bound to pick up in the near future.

All the diplomatic politeness that the new U.S. Ambassador in India, Mr. Thomas Pickering could manage—and his capacity in this regard is not to be underestimated—does not obscure the point that the U.S. would persist with efforts to get India to accept the NPT or any other alternative considered appropriate by Washington. This fact stands out of Mr. Pickering's address last month at Georgetown University's Institute for the Study of Diplomacy. "It is no accident," he said "that President Bush singled out South Asia in his non-proliferation initiative in July as a region where the dangers of proliferation remain acute. While most nations around the world have either signed the NPT or signalled their intention to adhere to it, India continues to insist on rejection of the treaty unless total, world-wide nuclear disarmament can be made a reality; and Pakistan, which admits to "a few" nuclear devices, will only sign the NPT if India does. While we would like to see both nations within the fold of the NPT, we are willing to work with them in a more narrow context to achieve progress toward that goal. Our proposal of a five-nation conference on the issue—which included China in an attempt to address New Delhi's concerns about a potential nuclear threat from Beijing—is still under consideration by India. In the interim, a delegation from Washington visited New Delhi earlier this summer to discuss ways of meeting Indian concerns; and an Indian Government group will be coming here later this year to continue our talks. It is not an issue we are prepared to give up on."

At some stage in the near future, the defence spending (by India) and the balance of power in South Asia are likely to be taken into account at the time of decisions on development aid and the supply of military hardware. Japan has been toying with the linkage of official development assistance with the "trends" in military spending. Germany has kept a close watch on the defence expenditure in India. Today, it is satisfied with a cut in real terms but tomorrow it may take a different view. A similar tendency to link the balance of power in South Asia with the sale of defence equipment could be vaguely discerned in Paris. That is the challenge that

India has to reckon with. Imaginary stories on cryogenic engine distract attention from it.

### Russia Urges Signing

93WP0022A Madras *THE HINDU* in English  
15 Oct 92 p 1

[Article by Vladimir Radyuhin: "Russia Urges India To Join NPT"]

[Text] Moscow, Oct. 14. A Russian Foreign Ministry spokesman has reaffirmed Moscow's desire that India should join the non-proliferation treaty.

Responding to last week's criticism of New Delhi's stand on NPT in *IZVESTIYA*, a leading Russian evening daily, Mr. Sergei Yastrzhemsky, head of the Foreign Ministry Information Department, told a press briefing in Moscow that "it would be in the interests of the international community that such a major nation as India should sign the nuclear non-proliferation treaty."

*IZVESTIYA* called the Indian position on NPT a "blind alley" and asserted that "Russian diplomacy has taken a tough stand on the issue" in contrast to the conciliatory attitude of the former Soviet leadership.

The Foreign Ministry spokesman restated the known position of Russia that "the NPT is the cornerstone of international accords standing in the way of the proliferation of nuclear and other mass destruction weapons." A relatively new element in the Russian line of argument is reference to Moscow's efforts to get Ukraine, Belarus and Kazakhstan, which still have nuclear arms on their territories, sign the NPT. "At a time when we have been calling on some CIS members to join the NPT as non-nuclear States. Any instances of negative attitude towards this treaty, as in the case of India, can only make things more difficult," the Russian spokesman said.

While all the three former Soviet republics have undertaken to become non-nuclear in the future, they are unlikely to meet the original deadline of 1994. Belarus and Kazakhstan are talking about some seven years that may take them to either transfer their nuclear missiles to Russia or dismantle them. In the meantime, both republics have agreed to hand over control of their nuclear arsenals to Russia. Ukraine insists on retaining "operational and administrative" control over its nuclear weapons and avoids committing itself to any specific timetable for their destruction.

The spokesman called purely speculative *IZVESTIYA*'s suggestion that the NPT issue may prove "a stumbling block in Russian-Indian talks" when the president, Mr. Yeltsin, visits India in January next. He said the agenda of the forthcoming talks had not yet been finalised, adding, however that "it cannot be excluded that this issue may come up for discussion, too." Meanwhile, according to both Russian and Indian sources in Moscow, the NPT issue has not been raised so far during preparations for the visit of the Russian president.

**TAPS Reportedly May Run on Indigenous Fuel**  
*93WP0024A Hyderabad DECCAN CHRONICLE*  
*in English 3 Oct 92 p 4*

[Article: "TAPS Can Run on Indigenous Fuels"]

[Text] Bombay, Oct. 2 (UNI): Atomic Energy Commission chairman P. K. Iyengar on Friday said India was fully prepared to run the Tarapur Atomic Power Station (TAPS) by using indigenously-prepared mixed oxide (mox) fuels, if France or any other country refused to sell enriched uranium to the country.

Dr. Iyengar said that Tarapur already had an enrichment facility to prepare mixed oxide fuels, using depleted uranium and plutonium from the Indian nuclear plants.

Asked why it was felt necessary to approach France to continue supply of enriched uranium for the TAPS, the top nuclear scientist said it was because of the quantities involved. It would also be cheaper to import the fuel given the lifespan of the TAPS, the only two of its kind in operation in the world.

Dr. Iyengar said the Department of Atomic Energy's (DAE) fast breeder programme had also envisaged use of mox fuels and this had enthused Indian nuclear scientists to gain rich experience in mastering the entire nuclear cycle, including recovery and handling of the fissile plutonium.

Meanwhile, he said that the TAPS has enough supplies of enriched uranium to last beyond 1993. The United States Government had cried a halt to supply of enriched uranium in 1980 in an attempt to force India to accept its full-scope safeguards. Again, recently it cautioned the Russia and other States of the erstwhile Soviet Union against supplying cryogenic rocket technology to India for its space programme, citing the clauses of Missile Technology Control Regime (MTCR).

However, France's refusal is being viewed by the nuclear community here with concern as it had earlier cooperated fully with India's peaceful nuclear programme.

Contingency plans in the event of non-supply of uranium fuel for the Tarapur Atomic Power Station (TAPS) were initiated in 1980 when the US began to twist the country's arm over its refusal to accept full-scope nuclear safeguards. "We have developed the necessary technology and we have long been ready for the challenge," observed Dr. Iyengar, according to a report in THE TIMES OF INDIA.

Informed sources say some fuel elements made from mox, encased in zirconium, have already been fabricated. These are ready to be introduced into the reactor in the very next cycle. In any case, the country already possesses supplies of enriched uranium for at least two more cycles of 18 months.

After the expiry of the Indo-US agreement on TAPS next year, India will be free to reprocess the Tarapur spent

fuel to recover plutonium and to use it to fabricate the mox fuel. "In any case, we have enough unsafeguarded plutonium from Rajasthan and Madras reactors and AEC won't even have to wait till the end of the agreement," says Dr. Iyengar.

The other option is to switch to indigenously enriched uranium. Although several routes—lasers and gaseous diffusion—to achieve this end exist, informed sources requesting anonymity say these options "would depend on technical feasibility."

However, even under such a scenario, the DAE may not have to wait: it is known to have secret pilot centrifuge enrichment facility at Ratanhalli, 20 km from Mysore. And Indian scientists seem confident of producing enriched uranium within the country to keep the TAPS running for the next 15 years. However, Dr. Iyengar denied that there was any secret facility at Ratanhalli, stating that it was a material facility.

The DAE already has set up a facility in Tarapur to produce mox in sufficient quantities.

## IRAQ

**Regime Reportedly Receiving Chinese Spare Parts**

*NC0711171592 (Clandestine) Voice of the Iraqi People*  
*in Arabic 1500 GMT 7 Nov 92*

[Text] Informed Western sources said last night that the ostracized tyrant's regime is smuggling spare parts for its military arsenal, that it has received at least two new shipments from China, and that it is developing its weapons in secret facilities in Iraq.

A Western intelligence source has said that one of these facilities is a military industrial complex near (al-Tartar) Lake to the northwest of Baghdad. It is recalled that China possesses weapons similar to those used by the ostracized regime.

The sources added that the two shipments included night vision equipment similar to that used by U.S. and British tanks with devastating results against Saddam's forces during the Gulf war. The sources added that the two shipments arrived in Iraq through Jordan, but they could not say accurately how the two shipments passed through. Some sources said that the spare parts were smuggled into Baghdad in Chinese diplomatic bags, however, which are not searched according to international agreements. They added that the spare parts were sent to the Chinese Embassy in Amman, which in turn sent them to the Chinese Embassy in Baghdad.

The sources accused a Dutch company of smuggling similar shipments of spare parts as foodstuffs, which arrived in the Jordanian port of al-Aqabah and were received by two Amman-based companies that serve the ostracized regime. One of the two companies is called (Awduwah) and is managed by Sultan al-Qawawi, an official in the ostracized regime's party.

## PAKISTAN

**PAEC To Build Reactors, Obtain Plants From PRC**

93WP0019A Lahore NAWA-I-WAQT in Urdu 7 Oct 92  
p 4

[Editorial: "Manufacture of Nuclear Reactors in Pakistan"]

[Text] Dr. Ishfaq Ahmad Khan, chairman of Pakistan's Atomic Energy Commission [PAEC], said in a speech at the opening of a "free course" in Lahore that in order to attain self-sufficiency in nuclear energy, Pakistan would not only build nuclear reactors but would also obtain additional nuclear power plants from China. In view of our programs for economic progress and our limited resources, it is vital that we become self-sufficient in the energy sector. Without developing an industrial base, we cannot emerge from the ranks of developing countries, and the first requirement for building an industrial base is a firmly founded energy sector. We do not have reliable coal, gas, or oil resources, and it is regrettable that we are being discriminated against by Western countries in our efforts to procure nuclear technology. As a result, our basic nuclear energy resources have remained the same over the years. Kala Bagh dam has been stalled because of disagreement. In view of the

increase in population and development programs, the progress in the energy sector has been almost zero. Our situation regarding nuclear energy now is this: The Karachi nuclear plant which we have been using for the past 20 years is smaller than those in other countries, whereas our needs are as large. Undoubtedly, those countries that have made significant economic progress have utilized nuclear energy. For example, Japan has 42 nuclear plants. Since Western countries are discriminating against us in the nuclear technology sector, we have no choice but to forge ahead on our own in building this technology. China has demonstrated its exemplary friendship by providing us with a 300 megawatt nuclear reactor; but this reactor will start production in 1998, and in the meantime, our energy needs will continue to grow. China has shown exemplary friendship but we cannot expect it from other countries. It is therefore welcome news to hear from the chairman of the Atomic Energy Commission that nuclear plants will be manufactured in Pakistan. There is no shortage of talent in this field in Pakistan; the other day, Dr. Abdul Qadir Khan also pointed out that our experts can build nuclear plants. The government should start this program; a medium-scale program would be sufficient if a wide-ranging program is not possible. We would thus be rid of discrimination by foreign countries, and we would have a guarantee that our needs would be fulfilled.

### **CIS Commander Appeals for Ban of Nuclear Arms**

*LD0111203492 Moscow Radio Moscow World Service in English 1900 GMT 1 Nov 92*

[Text] The Commander of the CIS combined forces, Marshal Shaposhnikov, has made an appeal to gradually eliminate the world's nuclear arsenals and other means of mass destruction. In an interview to a military magazine published in the United Arab Emirates he also favoured a tougher control of nuclear weapons production to halt nuclear proliferation. Marshal Shaposhnikov has said the CIS countries are prepared to stop all nuclear tests if other nuclear states followed suit.

### **CIS Briefing Denies Ukraine Nuclear Sale Reports**

*OW0611175592 Moscow INTERFAX in English 1635 GMT 6 Nov 92*

[Report by diplomatic correspondents Andrey Borodin, Dmitriy Voskobionikov, Boris Grishchenko, Igor Porshnev and others; from the "Diplomatic Panorama" feature; transmitted via KYODO]

[Text] Valeriy Manilov, Press Secretary of the Supreme Command of the United Armed Forces of the CIS, denies reports that Ukraine is insisting on the sale of nuclear weapons deployed on its territory instead of their transfer to Russia. This contradicts international agreements, CIS agreements, and the official position of Ukraine itself, said Manilov at a Friday press conference in Moscow. "Only Russia has the legal right to control the nuclear weapons of the former Soviet Union," contends Manilov.

The press secretary emphasized that there were no nuclear weapons aboard the ships of the Black Sea Fleet, and that it would be excluded from the United Armed Forces so that Russia and Ukraine could determine its fate during the transitional period.

Manilov declared himself against Russian officers having to repeat their oath of loyalty to Russia. This, in his opinion, would hamper the process of integration of the CIS countries.

According to Manilov, today, when one of the main tasks of the Commonwealth is the establishment of collective military security, it is important to concentrate on the creation of a mechanism for mutual action in defense of the CIS. Such a mechanism, he said, must also be created for CIS peacekeeping forces so that they will not only exist on paper, but actually turn out to be effective in resolving ethnic conflicts.

This also touches upon the possibility of creating a system of collective security for the Baltic states, since even now, installations of the former USSR are located there. According to Marshal Shaposhnikov, this question will be discussed at the CIS Supreme Command in the event that there are signs of interest on the part of the

Baltic States themselves. Furthermore, said Manilov, if the Baltic states did not insist on forcing the question of the withdrawal of Russian forces, it would be possible to help Lithuania, Latvia, and Estonia establish their own armed forces, as well as to guarantee them military equipment.

### **U.S. Uranium Trade Accords Termed 'Discrimination'**

*PM0211124792 Moscow KRASNAYA ZVEZDA in Russian 29 Oct 92 p 3*

[Report by Mikhail Pogorelyy: "Uranium Will Have To Be Sold More Expensively"]

[Text] The U.S. Department of Commerce has reported the signing of agreements with six former Soviet republics regulating their uranium exports to the United States. Appropriate agreements have been concluded with Russia, Ukraine, Kazakhstan, Uzbekistan, Kyrgyzstan, and Tajikistan.

The agreements envisage banning the export of uranium ore and enriched uranium to the United States at dumping prices (that is to say, far below the domestic and world market prices). It will not be permitted to sell uranium at below \$28.60 per kilo on the American market. Hitherto the aforementioned republics had been flooding the United States with cheap nuclear fuel, at \$18-20 per kilo—which drew sharp protests from some of the 11 American uranium extracting and processing companies.

According to U.S. Department of Commerce figures, uranium deliveries last year topped 5,900 tonnes and represented one-eighth of USSR exports to the United States at \$110 million.

There is no doubt that such a large volume of sales of nuclear fuel on the American market was because of the low prices of the Russian raw material. In raising its cost to the level of American firms' product, and particularly in the case of the sale of uranium at higher prices, the U.S. authorities will allow it to be imported in more substantial volumes. The volume of sales of this raw material will be jeopardized, however, as it can be bought at home for the same money, whereas on the world market it costs around \$21. Why spend money on transportation, security, and so forth? What we have here is yet another attempt at trade discrimination against Russia. It seems that U.S. corporations only acknowledge competition among themselves....

Yet, according to expert forecasts, the supply of uranium to America from the former Soviet republics was supposed to increase substantially through the sale of fissile material extracted from dismantled nuclear munitions.



**Russian Official Denies Strategic Arms Sale of PRC***OW0910134992 Tokyo YOMIURI SHIMBUN  
in Japanese 9 Oct 92 Morning Edition p 5*

[Text] Moscow Bureau, 8 October— Asked by YOMIURI SHIMBUN on 8 October to confirm information provided by a U.S. Government source that Russia has signed a contract with China for the sale of strategic weapons, such as intercontinental ballistic missiles (ICBM) and strategic bombers, Pakhomov, vice minister of the Russian Ministry of Foreign Economic Relations which is in charge of exporting weapons, unequivocally denied the signing of such a contract, saying that "such a contract has not been concluded between Russia and China and I have nothing to comment on it." The same day, a spokesman for the Russian Defense Ministry flatly denied the possibility of the military's involvement in such a deal.

**Russia-PRC Nuclear Cooperation Promoted***LD0311185992 Moscow ITAR-TASS World Service  
in Russian 0908 GMT 3 Nov 92*

[By ITAR-TASS correspondents Grigoriy Arslanov and Andrey Kirillov]

[Text] Beijing, 3 November—Russia and China intend to improve their cooperation in using the atom for civilian needs. This was announced here by Viktor Mikhaylov, Russian minister of atomic energy. During his visit to China, which ended today, he met PRC State Council Vice Premier Zhu Rongji and held talks at the Chinese State Nuclear Corporation and the Academy of Engineering Physics. The minister said in an interview with ITAR-TASS that Russian and Chinese nuclear experts intend to cooperate in the building of nuclear power stations and conversion of defense industry enterprises. A number of specific ideas have already been elaborated with regard to conversion and the setting up of joint commercial enterprises, for example, in the sphere of medicine and the production of equipment for treatment and diagnosis.

The sides also plan to pool their efforts in moving toward thermonuclear fusion and in developing a joint fast reactor project. According to the minister, a Russian-designed nuclear power plant is to be built in China; it will have two sets of the aqueous power reactor-1,000 type of 1,000 megawatts each. A uranium enrichment enterprise is also to be built to meet the requirements of power engineering. China will be assisted in improving the safety of nuclear power stations and in training experts.

Cooperation with China and the fact that China purchases Russian equipment "are of great importance to our nuclear power engineering," V. Mikhaylov added. A document on cooperation in nuclear power engineering

between the two countries will be signed during the forthcoming visit to China by Russian President Boris Yeltsin.

Touching upon the worries of some foreign countries that China may use its cooperation with Russia for military purposes, the minister spoke in favor of strengthening control both by Russia and the international community. According to him, appropriate measures have been envisaged both for the construction of the nuclear power plant and the uranium enrichment plant. "We are prepared to develop relevant criteria and to cooperate with U.S. scientists on this. Obstacles should not be erected to cooperation," however, he concluded.

**Russian Official Asserts CW Pledge Compliance***PM021115592 Moscow KRASNAYA ZVEZDA  
in Russian 30 Oct 92 p 3*

[Interview with Academician Anatoliy Kuntsevich, chairman of the Russian president's Committee on the Convention Problems of Chemical and Biological Weapons, by Aleksandr Dolgikh; place and date not given: "We Do Not Need To Increase Chemical Weapons Stockpiles"]

[Text] A lot of the mass media recently ran a report that Russia, contrary to the statements made by its leaders and to adopted international acts, is producing chemical weapons. Our correspondent asked Academician Anatoliy Kuntsevich, chairman of the Russian president's Committee on the Convention Problems of Chemical and Biological Weapons, to explain.

[Kuntsevich] Russia is fully meeting its obligations not to produce chemical weapons. The fact that such weapons are stored at Defense Ministry stockpiles will be fully submitted to international verification in the established time frame. Russia has no need to increase its stockpiles, they are impressive enough already. But research and testing programs in the chemical weapons sphere are not banned under any of the existing international agreements. Therefore, the charges against departments, organizations, and specialists working in this sphere to safeguard national security have no foundation in law. Incidentally, even the draft of the future multilateral convention on the elimination of chemical weapons does not stipulate any ban on research in the sphere of chemical compounds with a high physiological activeness. So any university, institute, or plant laboratory will be able to synthesize these compounds in amounts of up to 100 grams a year and carry out a range of necessary research projects. In order to implement programs for developing [sozdaniye] defenses and means of carrying out combat training any participating state will be permitted to produce up to a tonne of chemical agents a year under international supervision [kontrol] at a special small-scale facility.

Now, in accordance with the Russian president's directive "On Priority Measures to Prepare for the Implementation of Russia's International Commitments in the Sphere of the Destruction of Chemical Weapons," the Supreme Soviet decree, and the government's instructions to our committee together with scientists and specialists from the Academy of Sciences, the Defense Ministry, the Foreign Ministry, the Ministry of Industry, the Ministry of Ecology and Natural Resources, the Ministry of Health, and other Russian departments, a draft program for the first phase of the destruction of chemical weapons in our country has been drawn up and submitted to the Russian Federation parliament. We are currently working on how to implement it as quickly as possible.

### **Russian Chemist Arrested for CW Production**

PM0311095592 Moscow *NOVOYE VREMYA*  
in Russian No. 44, Oct 92 (Signed to Press 27 Oct 92)  
pp 4-9

[Interview with Dr. of Chemical Sciences Vil Mirzayanov and Lev Fedorov conducted in Moscow on 22 October by Oleg Vishnyakov under the "Backstage Story" rubric: "Binary Bomb Exploded. First Victim Arrested by State Security. Can a State Crime Be a Departmental Secret? Chemical Weapons Are Banned, But Is the Military Continuing with Chemistry?"; first paragraph is introduction]

[Text] The chemist who spoke about the creation of a new kind of chemical weapons—in violation of international accords—has been arrested. On the eve of the arrest Dr. of Chemical Sciences Vil Mirzayanov and also his colleague Lev Fedorov came to *NOVOYE VREMYA*. They answered questions from *NOVOYE VREMYA* correspondent Oleg Vishnyakov.

[Vishnyakov] You are the first Russian chemists to openly voice disagreement with state policy in the sphere of chemical disarmament. Why had none of your colleagues protested before, and what prompted you personally to take this step?

[Mirzayanov] I worked for more than 25 years in the State Union Scientific Research Institute of Organic Chemistry and Technology [SUSRIOCT] on Moscow's Shosse Entuziastov. The institute was engaged and is still engaged in the development of new kinds of toxins and in their production technology. My specific field is determining the microconcentration of toxins in the air, in water, and in the soil. I was involved in starting up production of new toxins and in field trials of chemical weapons. For the past five years I held the post of chief of the department for countering foreign intelligence services.

I will at once remark that sober-minded scientists who have been developing chemical weapons have always understood the pointlessness and the practical uselessness of their research. Many of us tried to find out from the military whether there is, in general, a concept of the

use of chemical weapons. For atomic and hydrogen weapons exist—it is still possible somehow, at a great stretch, to explain their use. As regards chemical weapons, during all the time of our work we have not once received an intelligible explanation of how, where, and against whom they might be used.

We understood deep down that we were engaged on something **wrong**, but we carried on working more out of inertia. Where else could we go—wages at the institute were slightly higher than the average for the country, there were certain privileges... In addition, our specialty is virtually unamenable to "conversion." I personally do not know a single able scientist in our institute who tackles his work with pleasure. But this is all they know how to do. That is the whole tragedy.

[Fedorov] I am a pure academic scientist. After graduating from university in 1964, I started work at the Academy of Sciences, where I am still working.

It was from civic positions that I arrived at the idea of tackling questions of chemical disarmament. As a scientist, I was disconcerted by the fact that the changes which were occurring in the USSR's relations with its "likely enemies" were not touching at all on the sphere of chemical weapons. Moreover, when the United States ceased the mass production of toxins at the end of the sixties, we were only starting up the Novocheboksarsk Chemical Combine—the mightiest enterprise in the USSR for the production of chemical weapons. Clearly, we had been preparing to commission it for several years, and yet we might be stopped in time...

The Novocheboksarsk Chemical Combine is my special anxiety. I am a Chuvash by nationality, and I am not indifferent to the fate of my own people.

[Mirzayanov] After the commissioning of the plant at Novocheboksarsk and our scientists' development of a new supervirulent toxin—in circumvention of the Geneva Convention on Chemical Disarmament—it became clear to me that escalation in this sphere benefited only the chemical generals who had created for themselves a sinecure in the form of research appropriations, awards, and Lenin prizes.

[Vishnyakov] Let us dwell in greater detail on the new toxin.

[Mirzayanov] Approximately two years ago scientists at our institute created a new toxin which, in terms of its combat characteristics, is five to eight times superior to the most toxic of the VX-type toxins now in existence. If someone is affected by it, even if it only gets on the skin, it is practically impossible to effect a cure. I know people who were subjected in the past to the effects of this toxin. They were all left invalids.

On the basis of the new toxin we developed our own binary weapons, which proved considerably more effective than the U.S. ones. How was this achieved? The thing is that, unlike the U.S. binary weapon, each of

whose components is individually totally safe (this is its advantage), one of the components in our weapon is a toxin.

An experimental industrial batch of the new toxin was produced at a plant in Volgograd, after which several scientists who developed it and chemical military chiefs who had attached themselves to them received Lenin prizes from the hands of President Gorbachev himself. This was in the spring of 1991, i.e. after the signing of the bilateral "Bush-Gorbachev" agreement on the nonproduction and destruction of chemical weapons. Consequently, we thoroughly duped the Americans.

[Vishnyakov] And yet the bilateral agreement says nothing about the **development** of chemical weapons. As far as I know, similar laboratory research is also conducted in the United States.

[Mirzayanov] In this case it is not a question of laboratory research. The Lenin prize is awarded only after the production of an experimental industrial batch. Of course, we are not speaking of a batch of several thousand tonnes, but we produced between five and 10 tonnes of the new toxin. This is accurate. Precisely this amount was needed for field trials, which were ended this spring on the Ustyurt Plateau near the city of Nukus. By that time this was already the territory of the sovereign state of Uzbekistan, and I doubt that Islam Karimov, the country's president, knew of these trials.

[Fedorov] The most unpleasant thing in this story is the fact that the two components of the new binary weapon are not on the list of intermediate substances which, under the draft Geneva convention, are to be subjected to inspection. That is, purely juridically we are not violating the convention, but we are undoubtedly acting dishonorably. In point of fact, the talks on chemical disarmament must be started all over again.

[Vishnyakov] Which of the Soviet leaders knew of the new weapon? For example, in 1987 Eduard Shevardnadze, who was then foreign minister, declared that the USSR was unilaterally ceasing the development and production of chemical weapons. Did he know he was telling an untruth?

[Mirzayanov] They might simply not have told Shevardnadze. The monopoly on this kind of information was in the hands of those who were creating these weapons. By the way, at least another two years after that statement we were continuing to produce toxins of the soman type.

[Vishnyakov] Did Yeltsin know?

[Mirzayanov] I doubt it. Although, as first secretary of Moscow CPSU City Committee, he was responsible for all installations of the military-industrial complex on the capital's territory.

Does he know now? You see, as far as I can judge, our president, like his predecessor, is not very trusting of alternative sources of information, preferring to receive it exclusively from his own aides. Yeltsin's chief aide for

problems of chemical weapons is now General Anatoliy Kuntsevich, who in the past was deputy chief of the chemical troops. The man who in 1982 promised not to respond to the U.S. escalation of U.S. binary weapons and who gave an assurance in 1987 that we had stopped producing toxins. But in 1991 he received the Lenin prize for creating a new weapon. Draw your own conclusions.

[Vishnyakov] To judge from Anatoliy Kuntsevich's quite successful visit to the United States, people there do not really believe in the existence of a new type of chemical weapon.

[Mirzayanov] It seems to me that on the eve of the election the U.S. Administration does not wish to acknowledge publicly that the Russians deceived them. There is still time before the convention is signed. Maybe they will be more active after the November election.

[Fedorov] The thing is also that U.S. military chemists are more friendly with their colleagues from Russia than with their own politicians. Military people find a common language with each other far more quickly. There has been and is no confrontation between them. This is just a means of existence for both sets of people.

[Vishnyakov] According to our official data, Russia possesses 40,000 tonnes of toxins. To what extent, in your opinion, does this figure tally with reality?

[Mirzayanov] When I was working in the institute, specialists said that we had approximately 60,000-70,000 tonnes. I have never heard the figure of 40,000 tonnes. This figure is undoubtedly understated.

[Fedorov] Under the terms of the bilateral "Bush-Gorbachev" treaty on chemical weapons, the total quantity of toxins on each side must not exceed 50,000 tonnes. Officially we have 40,000 tonnes (the Americans have 35,000 tonnes), of which 30,000 tonnes are the new, phosphorus kinds—toxins of the sarin, soman, and VX types—and 10,000 tonnes are the old, skin-blistering kinds of the mustard gas and lewisite types and a mixture of mustard gas and lewisite. The structure of the phosphorus toxins has never been made public. The structure of the skin-blistering toxins is as follows: 7,000 tonnes of lewisite and approximately 1,500 tonnes of a mixture of mustard gas and lewisite. Mustard gas accounts for something like 1,500 tonnes. These are the official data. I personally am convinced that this is not the truth. Rather, not the whole truth. Maybe what is meant by the 40,000 tonnes is just the toxins **ready for use**.

[Vishnyakov] That is?

[Fedorov] The thing is that it is far more complex to destroy the old toxins than the phosphorus ones. In addition, mustard gas and lewisite really are very difficult to handle, and it is possible that, so as not to frighten the world too much by putting up our stocks of mustard gas and lewisite for general review, they decided partly to do away with them **before this**.



Let us calculate. Starting in 1942, the plant in Chapayevsk (Samara Oblast) produced approximately 1,500 tonnes of mustard gas and lewisite a year. This continued through the end of the war. In addition, after the war we brought out of Germany another plant for the production of mustard gas and lewisite and set it up in Dzerzhinsk (Nizhniy Novgorod Oblast). It operated until approximately 1952. Productivity there also was no less. Plus a small experimental plant in the grounds of the SUSRIOCT in Moscow, which also produced mustard gas and lewisite, albeit not in such quantities. Incidentally, during the panic of October 1941 in Moscow all the mustard gas and lewisite was buried right in the institute's grounds. If a bulldozer were used there, I am convinced that it would be possible to find wartime shells containing toxins...

[Mirzayanov] There is another gap in the history of our chemical weapons. When relations with China became extremely exacerbated at the end of the sixties, and military clashes were threatening to escalate into a full-scale war, the military declared that they had nothing with which to protect the border. Then the command adopted the decision to "additionally furnish" the troops stationed on the border with China with shells containing mustard gas and lewisite. It was then that the toxins store at Chapayevsk, which had to be offloaded to build a new plant, was emptied. It was also then that there were rumors of a new chemical weapons base in the Transbaykal region.

[Vishnyakov] Only rumors?

[Fedorov] We do not know that yet... There are seven bases with toxins located on Russian territory. We know of only two of them: the city of Kambarka in Udmurtia and the settlement of Gornyy in Saratov Oblast. Mustard gas and lewisite are there. Under the "Bush-Gorbachev" agreement we pledged to tell the Americans the location of the other bases. True, as is known, this treaty has not been ratified, and we could delay over fulfilling it. Only when I wrote the letter to the Foreign Ministry asking them to tell me, an independent ecologist, the coordinates of these bases, they refused, but they pointed out that they had already reported this to the Americans confidentially. The Americans know, while the residents of nearby cities and villages do not.

Incidentally, the Americans themselves make no secret of the location of their bases with toxins.

[Vishnyakov] If I have understood you correctly, did the military decide quietly to do away with mustard gas and lewisite?

[Fedorov] The residents of Chapayevsk maintain that some of the mustard gas which was not taken away to the Transbaykal region was buried right on the territory of the chemical site. There are eyewitnesses among local residents of the village of Pokrovka who observed a strange phenomenon in the early eighties: The ground flared up and rose up. From the chemical viewpoint this is explicable: The mustard gas had been buried and

covered over with alkali or bleaching powder. This resulted in an exothermic reaction. When, in September of this year, I requested permission to enter the territory of the plant and the chemical site to take ground samples, I was not admitted on the personal orders of Gen. Petrov, chief of the chemical troops.

An occurrence at the Kambarka base also dates from the mid-eighties. There a poisonous smell suddenly and unexpectedly issued from the stores. People began to fall ill. It turned out that the military had been independently burning lewisite there, and had done so openly. Naturally, the residents were told nothing.

It is known now that during the fifties we sank considerable stocks of mustard gas and lewisite in the White Sea—of which we were "notified" by starfishes several years ago. Even earlier, during the forties, we sank mustard gas in the Pacific.

Finally, there is the small station of Kotelnikovo not far from Nizhniy Novgorod. Officially an air detachment was stationed there, but in fact it had nothing whatever to do with aviation. All the shells containing toxins which had started to leak (this happened quite frequently) were taken there, where the "air detachment" workers used up these shells and burned them. The forest there is rust-colored all year round.

This is where they are, these missing 20,000-30,000 tonnes of mustard gas and lewisite—sunk in the Pacific and the White Sea and buried in the ground, at Chapayevsk and maybe also Dzerzhinsk.

[Vishnyakov] Hardly anything is known about what the production of toxins cost us over all these years. Nor are there any data on the victims of this production...

[Fedorov] In Chapayevsk we sent many thousands of people "through the mill" during the war. Soldiers who had been deemed unfit worked in the plant. Production was completely open: Mustard gas and lewisite were poured into shells from kettles and scoops! In the space of a few months the "workers in the rear" became invalids and died. New people were brought into production.

Once during the war a train bringing reinforcements was delayed for some reason, and the plant stopped work. There was simply no one there to work!

In nearby villages and hamlets there is probably no family which has not had a relative die in chemical production.

[Mirzayanov] Closed technology was introduced in Dzerzhinsk only in the fifties, and prior to that the process had been entirely open.

[Vishnyakov] Many experts, including military experts, believe that not all kinds of toxins were that essential to us or their production justified.

[Fedorov] I am profoundly convinced that we should not, above all, have had anything to do with lewisite. Mustard gas and lewisite have identical characteristics. But mustard gas has an induction period, while lewisite acts instantly. This was why the military liked it—the results of its "work" are visible at once.

In addition, lewisite is an extremely highly toxic substance based on arsenic. But lewisite is many times more toxic and dangerous than arsenic.

The Germans, despite their "love" of toxins, did not take up lewisite. The Americans abandoned production of lewisite during World War II. But we began production before the war and continued right up until the fifties.

Or let us take soman, which replaced sarin in our country in the early sixties. The Americans at once rejected soman, considering its production technology unjustifiably expensive. For, in order to produce soman, it is necessary first to obtain several intermediate substances, including penakolinovyy [meaning unknown] spirit—very complex technology! But our scientists did this, putting in so much effort and state money. Lenin prizes were their reward for this.

[Vishnyakov] Officials have repeatedly declared that there was not a single accident in the USSR during the whole time at plants producing toxins.

[Fedorov] That, to put it mildly, is not quite so. I personally know of two major accidents at enterprises producing toxins. Thus, in 1974 Shop No. 83 of the plant in Novocheboksarsk, where VX gas was being produced, was badly damaged by fire. I do not possess any data about the consequences of that disaster or the casualties.

[Mirzayanov] A no less terrible disaster occurred in Volgograd in 1964. All the general discharges from Shop 34, where sarin was being produced, were concentrated in one place and were then diluted by general production waste. A so-called "white sea" was formed—a general dump of highly toxic waste. In the spring of that year there was high water, and the "white sea" joined with the Volga. Eyewitnesses recall that the entire river from Volgograd to Astrakhan was white with fish floating belly-up.

It is said that a furious Kosygin, who then held the post of deputy chairman of the Council of Ministers, outlined a resolution: "Punish by way of an example." Boris Libman, chief engineer of the Volgograd plant, was decided upon as a "scapegoat." By that time he had been awarded a Lenin prize. He was jailed. The prize was taken back. True, while in the camp, he wrote and defended a candidate's dissertation. He now lives in Philadelphia.

[Vishnyakov] Have there been any cases of the use of chemical weapons in the USSR?

[Fedorov] In 1921 the civil war hero Mikhail Tukhachevskiy—there is documentary confirmation of this—used toxins against the rebellious peasants of Tambov Province.

There is information that we prepared to use chemical weapons at the time of the Finnish campaign of 1940.

In 1970 the Polish authorities used CS police gas manufactured in the USSR against demonstrators in Gdansk.

Finally, April 1989, Tbilisi. According to official data, the military used CS to break up a demonstration, but...

[Mirzayanov] I know for certain that this was not CS but something more serious. I have talked with colleagues at the SUSRIOCT who analyzed samples that were taken. The analysis records were destroyed and subsequently falsified.

[Vishnyakov] Reports occasionally appear in the press that during the Armenian-Azerbaijani conflict one of the sides has used toxins. Is this possible?

[Mirzayanov] I do not rule out this possibility. The Russian military command has denied that there are chemical weapons on the territory of those states. Meanwhile, I know for sure that there was a chemical munitions dump near Baku and that a battalion of Soviet Army chemical troops was stationed there.

[Vishnyakov] What is your attitude to the program we have adopted for the destruction of chemical weapons?

[Fedorov] As far as I know, such a program has not yet been approved.

In an interview on Russian television A. Kuntsevich remarked bitterly that "unfortunately, production of toxins in our country, as distinct from the United States, was located in densely populated areas." What is meant by "densely populated areas" is the cities of Volgograd, Dzerzhinsk, Novocheboksarsk, and Chapayevsk.

[Mirzayanov] The Americans plan to destroy their chemical weapons directly on military bases located in uninhabited places. They are obliged to do this by a law adopted by Congress banning any movements of toxins about the country's territory whatever. The chemical weapons sited at U.S. military bases abroad have already been removed and are being destroyed on Johnston Island in the Pacific.

Unlike the Americans, our generals plan to return toxins from military bases to their places of production, i.e. to "densely populated areas," where they are to be destroyed by burning. There are no guarantees that the cities' residents will not be affected by toxins.

The situation is also exacerbated by the fact that neither sarin nor soman nor VX is destroyed completely at the moment of burning but remains in a concentration thousands or tens of thousands of times greater than the maximum permissible concentration. Here it is not a

question of technology, it is simply that it really is impossible to destroy these weapons. Therefore the Americans do not play the fool but burn toxins in remote places, knowing in advance that ecological pollution cannot be avoided. In my view, our program for the destruction of toxins is total adventurism.

[Vishnyakov] What, in your opinion, must be done?

[Mirzayanov] In our country chemical disarmament is being carried out by the same people who armed us chemically. Until we replace the whole concept of the destruction of toxins and discuss it publicly, until we replace the executors, I personally do not believe that this will be done safely for man and for nature.

[Box one] Despite the arrest of Doctor Mirzayanov and the clear warning by security ministry staffers, NOVOYE VREMYA has gone ahead and published this interview. Why?

State secrets have to be kept in order to safeguard Russia's national security. But are the development, testing, and industrial production of new, lethal weapons of mass destruction in line with our security interests?

At the beginning of next year Russia is to sign the Geneva Convention on Chemical Weapons, whereby our country is supposed to destroy all chemical arsenals and stop creating new ones. This means that Russia does not need chemical weapons: Production and storage of them are much more dangerous than the destructive effect they are expected to have.

This is the policy of the Russian president and parliament. It is the official position of the Defense Ministry. And if, as Doctors Mirzayanov and Fedorov claim, binary weapons are nonetheless being developed—in top-secret conditions—in whose interests is this secret being kept? Doctors Mirzayanov and Fedorov describe the activities of the military-chemical lobby and, in particular, talk about the personal interests of certain "chemical generals" who pass off departmental secrets as state secrets. Are these departmental secrets not too dangerous for the state and society and are the "chemical generals" therefore not damaging Russia's national security?

[Box two] Chronicle of an Arrest

The conversation with Vil Mirzayanov and Lev Fedorov took place at the NOVOYE VREMYA editorial offices on Tuesday 20 October. On Thursday 22 October two Russian Security Ministry staffers turned up at the office of NOVOYE VREMYA correspondent Oleg Vishnyakov, who had prepared the piece, and asked him to go with them.

At the Security Ministry investigation administration in Lefortovo the correspondent was told that he had been summoned for questioning as a witness. They told him that criminal action was being taken against Vil Mirzayanov under article 75 of the Russian Federation Criminal Code—"divulging state secrets" (between two and

eight years' imprisonment) and that he himself had been arrested. Because of the piece "Poisoned Politics," written by Mirzayanov and Fedorov and published in MOSKOVSKIYE NOVOSTI a month previously. The article was about a new type of binary chemical weapon that had been developed in the USSR in circumvention of international agreements.

During the interrogation senior investigator Aleksandr Cheredilov asked in what circumstances the NOVOYE VREMYA correspondent had met with Mirzayanov and Fedorov, on whose initiative the interview had taken place, and whether the correspondent had recorded the conversation. After the interrogation the investigator and the witnessing officer accompanied the correspondent home in order to seize the tapes of the interview.

As Lev Fedorov said in a telephone conversation with the NOVOYE VREMYA correspondent, they came for him, and for Mirzayanov, early in the morning of 22 October. The chekists' first question was: "What did you say in the interview with NOVOYE VREMYA?"

The officers searched Fedorov's apartment and, having seized two copies of MOSKOVSKIYE NOVOSTI containing the "Poisoned Politics" article, took the doctor of sciences to Lefortovo. He was kept there for half a day. Fedorov is also a witness in the "divulging state secrets case" since he is not a "repository" of state secrets.

On the morning of 23 October Russian Federation Security Ministry staffers turned up at the NOVOYE VREMYA editorial offices with an order to seize the text of the interview with Mirzayanov and Fedorov, which had been prepared for publication. They explained that the text had to be examined for state secrets. The results of the examination were promised for a week later at the earliest. The advice was to delay publication.

[Box three—caption to photograph of Mirzayanov] Chemist Vil Mirzayanov has spent a lifetime honorably carrying out the orders of his "chemical generals." He no longer intends to do so. He deems it his duty as a citizen of Russia to make dangerous departmental "secrets" public and thereby safeguard the interests of the state and society. Now he faces a trial. It must be held in open court. It is perfectly possible, though, that Mirzayanov, as a repository of state secrets, will be tried behind closed doors, in accordance with restricted instructions and legally binding departmental acts.

[Box four] State Secret Shrouded In State Darkness

What is a state secret? And who decides? In the early eighties the USSR Council of Ministers issued a list of state and military secrets. The list itself was a top-secret document. Only a few items in it came under KGB jurisdiction, in particular: operational technical state security facilities and facilities to safeguard border security. More secrets belonged to the Defense Ministry: organization, development, and production of new types of weapons, their composition and tactical and technical properties. Glavlit [Main Administration for Literature



Publishing Houses] experts had a copy of the secret list. It was their job to censor the press and the appearance of state secrets in it.

But the secret list was abolished by the Constitutional Oversight Committee in 1989. Glavlit was disbanded. The law on state secrets, although prepared by the Russian Justice Ministry, has not yet been adopted by parliament, so it does not exist (the rumor is that they want to make it secret too!). So who decides, now whether published articles conform to article 4 of the Russian Federation Law on the Press, which rules out the "use of the media to divulge information that is a state secret or other secret specially protected by the law"?

The NOVOYE VREMYA editorial board approached the Russian Federation Press and Information Ministry. At the state inspectorate for the protection of the media, which is responsible for monitoring the publication of state secrets, they were hard put to reply: "There is no precedent."

"Those who have state secrets should reply, not journalists," inspectorate deputy chief Nina Kostyukova said. "In our view, the provision on state secrets should be removed from article 4 of the law. But since it is there, we have to monitor its implementation. And if your journal publishes information containing state secrets, the journal will first be given a warning (in the case of repeated offenses the publication can be closed—Editor)."

But, according to Nina Kostyukova, there are no specialists at the inspectorate who would be able to provide expert assessments on state secrets. Nina Vladimirovna suggested that "an employee who had worked at Glavlit for a long time might have a list of state secrets, but this employee has left."

There is no list of state secrets at the press ministry registration department either.

We then turned to Boris Kuznetsov, well-known Russian lawyer and chairman of the law office. He has defended many people accused of divulging state secrets, in particular KGB General Oleg Kalugin and Captain 2d Class Vladimir Verbitskiy.

"Experts define state secrets by expert means. In my view, this is entirely illegal. Because we need to have a law and list of secrets that are accessible to journalists."

[NOVOYE VREMYA] Does this mean that all arrests made on a charge of divulging state secrets are illegal?

"Right."

"At the Kalininskiy Rayon court in Moscow Boris Kuznetsov is currently representing Gleb Yakunin and Lev Ponomarev, who are accused of divulging state interests. L. Ponomarev was head of the Russian parliament deputies' commission to investigate the SCSE [State Committee for the State of Emergency] case and G.

Yakunin was a member of the commission. They obtained access to KGB materials relating to KGB agents among the church leadership. The authorities considered that they were divulging state secrets by publishing the information.

"But KGB agents did not figure in the state secret category even in the USSR Council of Ministers' secret list. The lack of any precise legal regulation of a specific legal institution, on the one hand, makes for mayhem and, on the other hand, could damage Russia's security. You cannot punish a person for committing an act against which there is no legal protection."

[NOVOYE VREMYA] But article 75 of the RSFSR Criminal Code penalizes the divulging of state secrets (between two and eight years' imprisonment).

"The article stating the penalty for theft indicates what theft is. The same should apply here. The article you mentioned should not only state the penalty for divulging state secrets, but also contain a definition of state secret."

Boris Kuznetsov illustrated the kind of legal mayhem that can result by citing the case of Captain 2d Class Vladimir Verbitskiy, Baltic correspondent for the journal SOVETSKIY VOIN.

The military journalists got hold of some materials of the Liepaja garrison. They concerned the manufacture of minisubmarines for intelligence and sabotage purposes at an enterprise in the military-industrial complex. The military program provided for the construction of around 20 submarines, each one costing 22 million rubles [R] (in 1990 prices). But when one of them was launched it sank to the bottom. The sailor in it was only just saved. Vice Admiral Kuzmin, deputy commander of the navy, prohibited the submarines from putting to sea. But several boats already constructed by then were accepted by the Navy. Although they were on shore they had operational bills and crews, training was being carried out, and the officers were being paid!

Verbitskiy wrote an article and offered it to several publications. But no editorial board dared publish the article. On meeting with USSR people's deputy Neyland, Verbitskiy found a correspondent for the Swedish newspaper SVENSKA DAGBLADET, Olofsen, in his office. Verbitskiy showed the Swede his article and reassured him: The Swedes need not fear these submarines since they are not combat-capable. Verbitskiy also pointed out what the military industrial complex was investing the people's money in. A few days after the article was published in the Swedish newspaper Verbitskiy was arrested and charged first with spying for Sweden and then with divulging state secrets.

When Boris Kuznetsov began his defense of Verbitskiy, he found details of the "secret" Soviet submarine in numerous foreign military handbooks, which described

not only the minisubmarine, but also the mother-submarine, carrying several minisubmarines. The Swedish papers even published drawings of the submarine.

Boris Kuznetsov managed to obtain materials on the talks between USSR Defense Minister Dmitriy Yazov and the Swedish defense minister and naval commander. The Soviet delegation not only talked about the tactical and technical properties of these boats, but also confirmed that they were not combat-capable.

B. Kuznetsov was intending to use these documents in court, but the matter did not get that far. Seeing that it was futile to pursue the investigation, the KGB abandoned it "in favor of" the military prosecutor's office. It, in turn, dropped the case against Verbitskiy....

#### **Russian Supreme Soviet Views CBW Destruction**

*PM0411160992 Moscow IZVESTIYA in Russian  
4 Nov 92 Morning Edition p 2*

[Report by Viktor Litovkin: "Chemical Weapons Destruction Program Approved in Russian Supreme Soviet Committees"]

[Text] The first phase of the Russian program for the destruction of chemical weapons stocks has been discussed at a joint session of two Russian Supreme Soviet committees—the Committee for Industry and the Power Industry and the Committee for Questions of the Environment and the Rational Use of Natural Resources.

IZVESTIYA has already reported the program in a pretty detailed way and we will therefore focus attention only on its fundamental provisions and on that which has not yet been written about. The most important point is the intention to recycle the toxic substances and convert them into a source of raw resources for Russia rather than burning them off. This applies primarily to arsenic, which is an especially valuable material for the electronics industry.

It is not extracted on Russia's territory, but stocks of it lie "buried" in lewisite, and they amount to almost 2,000 tonnes. With a price of \$3,000 per kilogram and the country's annual requirements amounting to 15-20 tonnes, it will not only meet the country's needs but will also become a source of major currency earnings.

The largest stocks of lewisite are located in the city of Kambarka (Udmurtia)—6,600 tonnes [as published], and in the settlement of Gornyy, Saratov Oblast—around 1 tonne. Warehouses containing yperite and yperite-lewisite compounds are also located there. It is planned to construct terminals at those locations to discharge the old containers of toxic substances and detoxify them at the same time. It is then planned to transport the inert substances to reprocessing facilities. It is intended to site one pilot industrial facility to recycle the products of detoxification in the city of Volsk-17, Saratov Oblast.

It is planned that artillery shells, rockets, and mortar shells containing organophosphorus substances (sarin, soman, and V-gases)—a total of 9,800 tonnes of toxic substances—stored at depots in the city of Shchuchye, Kurgan Oblast, and the city of Kizner (Udmurtia) be shipped to the "Khimprom" Production Association's modernized plant in Novocheboksarsk (Chuvashia), where they will also be recycled. According to experts, that plant has retained a unique (150- to 200-strong) team of highly skilled specialists who have already worked with such weapons and have a completely clean accident record.

The cost of implementing the first phase of the program, including tackling the social problems of the population—and that is its priority—will come to 4.4 billion rubles [R] in summer 1992 prices, which includes R320 million allocated to Kambarka; R207 million to Gornyy; over R100 million to Cheboksarsk; R29 million to the pilot industrial facility in Volsk-17; R100 million for railroad modernization; R80 million to a diagnostic and prevention center....

The construction of the terminals and the pilot industrial facilities and the modernization of the plant in Novocheboksarsk will take four to six years. Some 43 percent (17,000 tonnes) of all stocks of Russian toxic substances will then be destroyed by the year 2004.

But it will be possible to start this work only if, as was stressed by Vitaliy Vitebskiy, deputy chairman of the Russian Supreme Soviet Committee for Industry and the Power Industry, it receives the approval of not just parliament but also the population and administrations of the localities where it is planned to recycle the chemical weapons.

The program will be examined in parliament after consideration of the comments of specialists and the population of the regions. Appropriations for it should start on 1 January 1993, otherwise Russia will be unable to meet its international commitments and, most importantly, will not for a very long time yet dispose of the danger of being "blown up" by its own chemical "mines."

#### **Russian Nuclear Security Chief on Black Market**

*PM0311113392 Moscow Russian Television Network  
in Russian 2000 GMT 29 Oct 92*

[Video report by S. Milyanchikov and D. Malyshev, from the "Vesti" newscast]

[Text] [Milyanchikov over video of street scene and industrial installation, shown previously in referent item where it was described as a "secret military plant in Udmurtia," and identified by Mokhov in this item as a plant located in Glazov] As reported earlier, Russian Security Ministry personnel have prevented large shipments of nuclear materials stolen from atomic energy industry enterprises from being smuggled abroad. We



asked the head of the Ministry of Nuclear Power Generation administration in charge of nuclear power installation security, to comment on the incident.

[A. Mokhov, head of an administration of the Ministry of Nuclear Power Generation] Recently organs of the Ministry of Security, together with the Ministry of Internal Affairs, exposed facts of this kind—in Glazov and Podolsk, to be specific. An investigation is under way. Once facts of this kind are exposed, it is necessary to investigate how this could have happened, and, naturally, to take all the steps necessary to prevent, as far as possible, a recurrence in the future.

All attempts to sell nuclear materials on the black market are doomed to failure in advance. There is no one to sell them to, you understand. Anyone who needs nuclear materials has already obtained them through official channels. Therefore they cannot be interested in any sort of contacts with shady elements....

#### **Russian Ministry Arrests Arms Export Officials**

934P0007B Moscow KOMMERSANT-DAILY  
in Russian 23 Oct 92 p 15

[Unattributed article: "Weapons Trade: Spetsvneshtekhnika Specialists Arrested"]

[Text] KOMMERSANT has learned from reliable sources that yesterday ministry workers arrested several workers of the Spetsvneshtekhnika joint-stock company who were suspected of illegal operations involving the sale of arms abroad. During the search they confiscated money and valuables worth a total of 200 million rubles.

The Spetsvneshtekhnika joint-stock company is the legal heir to the previously existing Main Technical Administration of the USSR Ministry of Foreign Economic Relations and, like its predecessor, on behalf of the state and at the request of the government, it engages in the sale of large batches of weapons outside Russia.

Our correspondent managed to contact the deputy president of the joint-stock company, Yuriy Andrianov, who was literally flabbergasted by our correspondent's report and assured him that he knew nothing about what had happened. KOMMERSANT will report the details of the event on Saturday, 24 October.

#### **Russian Experts on Recycling Nuclear Fuel**

PM0511092592 Moscow Russian Television Network  
in Russian 2000 GMT 31 Oct 92

[Video report by S. Milyanchikov and D. Malyshev, from the "Vesti" newscast]

[Text] [Milyanchikov] In the near future our nuclear industry should at last be given a legislative basis. A number of laws are currently being examined by a committee and a commission of the Russian Supreme Soviet. One of those laws, on nuclear waste, which bans the import of nuclear waste into Russian territory for

reprocessing, is causing nuclear power industry people great concern. Under international treaties we are obliged to accept waste products from nuclear power stations to which we supplied nuclear fuel. Not only that, strictly speaking only about 2 percent is waste: The rest can be recycled, and Russian specialists believe that it can be reprocessed and sold at a profit.

[N. Yegorov, deputy minister of nuclear power generation] At present Russian enterprises—and we have only one, the Mayak Production Association, which accepts spent fuel for reprocessing—could earn \$50 million to \$60 million a year for this kind of work.

[Milyanchikov] We should also note that this unusual type of commercial activity is also undertaken at present by Britain and France. Russia could soon find that there is no room for it in the world reprocessing market. [video shows exterior, interior shots of power stations]

#### **Russia Launches Long-Range Missile From Tu-160**

PM0511100592 Moscow Russian Television Network  
in Russian 0700 GMT 31 Oct 92

[Video report by V. Romantsov and O. Skalskiy, from the "Plus Eleven" program; figures in brackets denote broadcast time in GMT in hours, minutes, and seconds]

[Text] [070129] [Romantsov over video of aircraft on tarmac] For the first time in Russia a long-range cruise missile was launched from a Russian-owned Tu-160 in the Saratov Oblast city of Engels 22 October.

It can be claimed that the Tu-160 is a fourth generation aircraft. At least this is how the military describe it. According to them it contains more electronic equipment than a spacecraft. It has 32 computers on board. As for its technical specifications, it is superior even to the U.S. B-1 and B-2 aircraft of the same class.

On the subject of the cruise missile, we are only able to say that it is secret. We were allowed to film only part of it, and that was under wraps.

Externally it resembles this training missile. Except that it has a drawing of a shark's mouth on its nose section.

[Unidentified man in uniform] We are constantly ready to defend our fatherland, our country, our Russian Federation.

[Romantsov] They say that one such aircraft, fully armed with missiles, is capable of putting any country out of a battleworthy state. So that one man can win a war, after all... [rephrasing a well-known saying] [070220] [video shows Tu-160 exterior and interior, cockpit instruments, missile under wraps being wheeled toward aircraft, training missile, more glimpses of exterior and interior of aircraft, pilot at controls]

### **Russian Navy Removes N-Missiles From Pacific Fleet**

*OW0611030692 Tokyo KYODO in English 0249 GMT  
6 Nov 92*

[Text] Moscow, Nov. 5 KYODO—The Russian Navy has completed the removal of tactical nuclear weapons from vessels in the former Soviet Union's Pacific Fleet, Russian defense sources said Thursday.

The removal of the weapons, part of former Soviet President Mikhail Gorbachev's October 1991 proposal for nuclear disarmament, was completed at the end of September and the missiles have been stored in warehouses on land, the sources told KYODO NEWS SERVICE.

With this development in arms limitations in the Far East, the only nuclear weapons of the now-defunct Soviet Union that remain stationed at sea are tactical missiles carried on nuclear submarines.

Moscow military sources cautioned that the Pacific Fleet appears to have strengthened its conventional military power, however, which may become a source of tension in relations between Japan and Russia.

With the exception of the fleet in the Black Sea which is under the joint administration of Russia and Ukraine, the old Soviet naval fleets have been reorganized under Russian control.

Among the tactical nuclear weapons removed from the Russian vessels were the SSN 22 Cruise missiles with a range of 550 kilometers, which were carried on Soviet cruisers stationed in the Pacific, as well as sea-to-land missiles and nuclear depth charges.

Meanwhile, the land-based nuclear arms of the Soviet Union are supposed to be moved from the former Soviet republics to Russia, where they are scheduled to be disposed of.

Plans for the disposal of the weapons have been hampered by a lack of money and disposal facilities.

Regarding the removal of the sea-based tactical nuclear weapons, the Russian Defense Ministry said that international treaties say nothing about the destruction of such weapons.

### **Russia Releases Writer of Article on War Chemicals**

*OW0311132492 Moscow INTERFAX in English  
1153 GMT 3 Nov 92*

[Transmitted via KYODO]

[Text] The court of the Kalininskiy district in Moscow has decided to release Vil Mirzayanov from custody on Tuesday. On October 22, after publishing an article in the weekly Moscow News claiming that Russia continues to develop new types of war chemicals, he was arrested

by the Security Ministry. According to the ministry's public relations center, Mr. Mirzayanov was charged last Friday with disclosing a state secret which could land him a two to five year prison term.

### **Uranium-235 Smuggling to Moscow Thwarted**

*934P0007A Moscow KOMMERSANT-DAILY  
in Russian 21 Oct 92 p 14*

[Unattributed article: "Attempt to Steal Uranium: The Chekists Received a Tip-Off and the Uranium Did Not Make It to Moscow"]

[Text] We have already reported, in our 17 October issue, that a Luch Scientific Production Association worker who tried to steal 1.5 kg of uranium-235 was arrested in Podolsk. Charges were brought under Article 223 Point 2—"Illegal acquisition and storage of radioactive materials" (up to five years). Point 3 will probably be added—"Theft of radioactive materials" (up to 10 years). KOMMERSANT correspondent Boris Klin went to the scene to get the details.

It turned out to be very easy to find the secret enterprise in the small provincial village. The first passerby pointed it out. The policemen on duty greeted the unexpected guest impolitely, they would not speak about the incident, and they advised that he not waste his time. The secretary announced that the director was not handling the incident and anyway he did not feel very good so he went home. His deputy for security, Sergey Rystsov, was also absent—he was accompanying a foreign delegation to Moscow. And the workers said that they had learned all the details of the matter from the central newspapers.

Convinced that the collective of the Luch Scientific Production Association was able to keep a secret, I went to see the chief of the Fourth Division of the Main Internal Affairs Administration of Moscow Oblast for Podolsk, Yevgeniy Nikiforov. He expressed his regret that the investigator was not there—he had left for Moscow to go to the Procuracy of Russia. "We are expecting him any minute. I myself do not have all the information. Moreover, the Criminal Procedure Code gives only the investigator the right to divulge such information," Yevgeniy Aleksandrovich was sympathetic. But I did manage to have a conversation with the head of the press service of the Ministry of Security of Russia for Moscow Oblast, Aleksandr Mikhaylov. Because of the kindness of Mr. Nikiforov, who phoned the city division of the Ministry of Security of Russia and made a request for me to the workers of the local special services.

The chief of the city division, Sergey Kudryavtsev, and the chief of the press service of the administration of the Ministry of Security of Russia for Moscow Oblast, Aleksandr Mikhaylov, gave us some interesting details: There was a theft and the suspect had managed to take the uranium through the guard gate. He was not arrested until a tip-off was received (I did not get the name of the vigilant patrolman) after he was already on his way to

Moscow and was about to board an electric commuter train. A worker of the Radon Scientific Production Association who participated in the arrest confirmed with the help of his instrument that the arrested person's luggage was "radioactive." In Sergey Kudryavtsev's words, the workers of the organs were somewhat flabbergasted. "We could not believe that it was possible to carry 1,200 grams of uranium-235 out of the restricted enterprise, but the information was confirmed—we confiscated three containers of uranium," said Sergey Alekseyev. The Chekists refused to make further comments, saying that would be unfair to the investigator in charge of the case.

*Uranium-235 is an enriched prepared raw material for atomic reactors. It is used in atomic energy engineering and also to obtain plutonium (which is necessary, mixed with uranium-238, for manufacturing nuclear weapons). But in the opinion of the experts who confiscated it, 1,200 grams is not enough either to start up a reactor or to manufacture an atomic bomb. Although the experts assert that this raw material is quite costly, it is difficult to say what its exact value is—according to information obtained by the editorial office, the price ranges from \$50-55 to \$1,500 per gram.*

When investigator Aleksandr Nikolenko arrived, he was cordial and even offered us tea and bagels. Mr. Nikolenko, however, refused to give the name of the person arrested, saying he was afraid of causing emotional harm to his family. Moreover, he explained, he did not want to contribute to the formation of a particular public opinion about the arrested person until the court had made a decision. Aleksandr Grigoryevich described his subject as a very cultured, educated, and well-read person. Mr. Nikolenko stated that the suspect has a higher technical education but was working as an ordinary worker (apparatchik). He had access to uranium because of his length of service. And although there was fairly good accounting for radioactive materials in the scientific production association, the uranium was not missed. Incidentally, after the theft the subject kept this property in his own apartment (true, the investigation revealed that it caused no harm either to people or to the environment). In the opinion of the investigator, the engineer-worker intended to sell the stolen uranium, but there are still no grounds for saying that he is in any way involved with the international nuclear mafia.

#### **Ukraine Deters Smuggling of Strategic Materials**

*AU0511113492 Kiev HOLOS UKRAYINY in Ukrainian 28 Oct 92 p 5*

[Report by Serhiy Shevchenko, Press Center of Ukraine's Security Service Administration: "Smugglers Do Not Let Chances Slip Through Their Fingers. However, the Counterintelligence Is Also on the Alert"]

[Text] Since the beginning of the year, the Security Service Administration in charge of Kiev and Kiev Oblast, in collaboration with law-enforcement and

supervision organs, has foiled 12 attempts on the part of various commercial structures to take out of Ukraine strategic raw and other materials, as well as commodities that are in very short supply.

Among the enterprises that entered the administration's field of vision in the process of operational activity was the research and production firm "Lyena." Its workers tried to smuggle abroad a large batch of hafnium and zirconium worth about 70 million rubles [R]. The investigation department of Ukraine's Security Service is looking into the circumstances and mechanism of illegal actions and is revealing their perpetrators in the framework of the criminal case instituted against them.

The "Kontrakt-91" and "Buddetal" enterprises were also going to sell a batch of zirconium worth almost R16 million and 100 tonnes of bronze alloys. Businessmen of the company with limited liability "AVIS-Ltd" (in Bila Tserkva) [near Kiev] were preparing to take to Armenia, without licenses, 26 tonnes of sugar and one tonne of butter from the territory of a military unit, but law-enforcement organs intervened in time.

The goods that were meant for illegal sale abroad include large batches of argentous metal mercury [sriblyasta metaleva rtut], imported footwear, and foodstuffs worth millions [of rubles]. The organizers of the actions resort to various tricks. Fictitious licenses are obtained from state and inspection organs, Xerox copies are printed, and bribes are offered to officials. Various shortcomings in the work of customs houses are also taken advantage of, as well as the absence in the state of an integral and single system of reliable control over the movement of goods across the border. In order to cover their tracks, the perpetrators practice repeated and multi-staged combinations for reselling the goods on the territory of Ukraine.

Today, Ukraine's Security Service Administration is inspecting other operational evidence regarding illegal entrepreneurship and the financial activity of Kiev's commercial structures and of related corrupt officials.

#### **Kazakhstan, U.S. Discuss Dismantling of N-Arms**

*LD0611001692 Moscow ITAR-TASS in English 1749 GMT 5 Nov 92*

[By KAZTAG correspondent—TASS Gennadiy Kulagin]

[Text] Alma-Ata November 5 TASS—Kasymzhumart Tokayev, deputy foreign minister of Kazakhstan, held consultations with General William Burns, special U.S. representative and head of the American delegation at the negotiations on the dismantling of nuclear weapons on the territory of the former Soviet Union. The general informed the Kazakh side of the United States' readiness to render the republic financial and technical assistance

in the dismantling of nuclear arms located on its territory as is envisaged by the treaty on strategic offensive weapons.

Both sides also discussed possible cooperation in this sphere. The representatives of Kazakhstan and the

United States considered practical issues of the implementation of the U.S. Congress-adopted law which stipulates the allocation of 400 million dollars for the above purposes to Kazakhstan, Belarus, Russia and Ukraine.

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